

Message

From: Michael Honeycutt [Michael.Honeycutt@tceq.texas.gov]
Sent: 7/9/2020 2:38:26 PM
To: Smith, Richard L [rls@email.unc.edu]; tcoxdenver@aol.com
CC: Armitage, Thomas [Armitage.Thomas@epa.gov]
Subject: Re: tomorrow's meeting

Good question, Richard. I don't know the answer. We will have a chance to ask EPA questions after their presentation to us. That is a good question to ask them.

Mike

From: Smith, Richard L <rls@email.unc.edu>
Sent: Thursday, July 9, 2020 9:34 AM
To: Michael Honeycutt <Michael.Honeycutt@tceq.texas.gov>; tcoxdenver@aol.com <tcoxdenver@aol.com>
Cc: Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: RE: tomorrow's meeting

Thanks Mike. I'll make sure I go through the whole of this section before tomorrow's meeting, and as much as I can of the rest of the document.

May I ask your opinion about one issue (it's possible this may have already come up in some of your discussions with EPA).

The last but one paragraph on page 35262 says "to the extent permitted by law" the EPA proposes to make all data available. How would this apply to the Harvard 6-cities and American Cancer Society datasets, which are still heavily cited by EPA (especially ACS)? Harvard and the ACS have consistently refused to release their data, claiming confidentiality agreements that were signed at the start of their studies. But they are not, as far as I know, prohibited by law from releasing them. So would the new rule allow these datasets to be used? This is unclear to me.

Apart from that, I'll go carefully through the list of steps they suggest for validating a dose-response relationship.

Talk to you tomorrow,

Best,

Richard

From: Michael Honeycutt <Michael.Honeycutt@tceq.texas.gov>
Sent: Thursday, July 09, 2020 10:13 AM
To: Smith, Richard L <rls@email.unc.edu>; tcoxdenver@aol.com
Cc: Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: tomorrow's meeting

Hi Richard and Tony,

Thanks for participating in tomorrow's call. The primary reason I asked for you two to participate is that the rule specifically addresses quantifying health endpoints in benefit cost analysis. This section starts on page 35620 of the attached proposed rule. We will have several SAB members who are economists at the meeting to look at the economic principles addressed by the rule, but please feel free to offer your opinions in those areas if you'd like.

Thanks again,
Mike

Message

From: Michael Honeycutt [Michael.Honeycutt@tceq.texas.gov]
Sent: 7/9/2020 2:13:10 PM
To: rls@email.unc.edu; tcoxdenver@aol.com
CC: Armitage, Thomas [Armitage.Thomas@epa.gov]
Subject: tomorrow's meeting
Attachments: EPA Federal Register Notice 2020-12535.pdf

Hi Richard and Tony,

Thanks for participating in tomorrow's call. The primary reason I asked for you two to participate is that the rule specifically addresses quantifying health endpoints in benefit cost analysis. This section starts on page 35620 of the attached proposed rule. We will have several SAB members who are economists at the meeting to look at the economic principles addressed by the rule, but please feel free to offer your opinions in those areas if you'd like.

Thanks again,
Mike

Appointment

From: Brennan, Thomas [Brennan.Thomas@epa.gov]
Sent: 6/30/2020 6:48:31 PM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: DeBell, Kevin [debell.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]
Subject: Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference
Location: RRB 3rd floor SABSO office conf room -- 31169
Start: 7/1/2020 6:00:00 PM
End: 7/1/2020 7:00:00 PM
Show Time As: Free
Importance: High
Recurrence: Monthly
the first Wednesday of every 1 month(s) from 2:00 PM to 3:00 PM
Required Attendees: Armitage, Thomas; Johnston, Khanna; Wooden-Aguilar, Helena; Kloster, Andrew; Michael Honeycutt
Optional Attendees: DeBell, Kevin; Carpenter, Wesley

On the first Wednesday of each month the SABSO will hold this time for a subset of SAB members to receive briefings from the EPA on newly proposed tier 1 and tier 2 rules. The purpose of the briefings will be to determine if the SAB will conduct a review of the proposed rules. The meetings will be held in the conference room of the SAB Staff Office in the Ronald Reagan Building (room 31169). Based on the topics of the month, technical and management leads from the Offices proposing the rules will be invited.

Message

From: Smith, Richard L [rls@email.unc.edu]
Sent: 6/30/2020 10:43:55 AM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]; DOERING, OTTO [doering@purdue.edu]; Cox, Tony [tcoxdenver@aol.com]; Peter Wilcoxon [wilcoxon@maxwell.syr.edu]; Richard Williams [rwilliav123@gmail.com]; jrturner@wustl.edu; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: Brennan, Thomas [Brennan.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Stallworth, Holly [Stallworth.Holly@epa.gov]
Subject: RE: Date for SAB teleconference to discuss SAB review of EPA's proposed benefit-cost rule

Tom,

I confirm my availability for that time. Thanks!

Best,

Richard

From: Armitage, Thomas <Armitage.Thomas@epa.gov>
Sent: Monday, June 29, 2020 10:46 PM
To: DOERING, OTTO <doering@purdue.edu>; Cox, Tony <tcoxdenver@aol.com>; Smith, Richard L <rls@email.unc.edu>; Peter Wilcoxon <wilcoxon@maxwell.syr.edu>; Richard Williams <rwilliav123@gmail.com>; jrturner@wustl.edu; Michael Honeycutt <Michael.honeycutt@tceq.texas.gov>
Cc: Brennan, Thomas <Brennan.Thomas@epa.gov>; Johnston, Khanna <Johnston.Khanna@epa.gov>; Stallworth, Holly <Stallworth.Holly@epa.gov>
Subject: Date for SAB teleconference to discuss SAB review of EPA's proposed benefit-cost rule

All,

Thank you for sending dates of availability for a teleconference with Dr. Honeycutt to discuss SAB review of EPA's proposed rule titled "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process." The teleconference will be held on **Friday, July 10th from 1:00 – 3:00 p.m. (Eastern Time)**. Please reserve that time for the teleconference.

At the teleconference you will receive a briefing from EPA's Office of Air and Radiation on the proposed rule and discuss whether the SAB should review the scientific and technical basis of the rule. This will be a non-public teleconference.

I will send you the teleconference call-in number, agenda, and any meeting material prior to the call. Thanks again for your willingness to participate in this call.

Best Regards,

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

From: Graham, John D. [grahamjd@indiana.edu]
Sent: 11/24/2020 5:11:05 PM
To: Brennan, Thomas [Brennan.Thomas@epa.gov]
CC: Barbara D. Beck [BBECK@gradientcorp.com]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Armitage, Thomas [Armitage.Thomas@epa.gov]
Subject: Re: [External] RE: Question on revised cross state rule
Attachments: smime.p7s

Ok. Let's revisit when we learn whether new science is being used.

Sent from my iPhone

On Nov 24, 2020, at 9:54 AM, Brennan, Thomas <Brennan.Thomas@epa.gov> wrote:

Hi John,

One of our challenges to this review is the 2/25/20 memo from the Administrator is very clear that the "full SAB" will conduct any regulatory review. By way of backstory, this Administration was very uncomfortable with a work group (separate from the full SAB) conducting these reviews. It was a consistent sticking point and theme for the first 2.5 years of SAB's reg review under this Administration.

So my point is that forming a workgroup to assess this reg review is inconsistent with the Direction from Mr. Wheeler and would be a non-starter on my end. His memo to SAB is watched closely and expected to be followed to the letter. I think we have to decide whether its both worthy or a review by the full SAB and if SAB could do it credibly.

Tom

From: Graham, John D. <grahamjd@indiana.edu>
Sent: Tuesday, November 24, 2020 10:07 AM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>
Cc: Barbara D. Beck <BBECK@gradientcorp.com>; Johnston, Khanna <Johnston.Khanna@epa.gov>; Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: Re: [External] RE: Question on revised cross state rule

It would almost certainly need to be a separate committee that we commission. We might have a few members who could participate.

Sent from my iPhone

On Nov 24, 2020, at 8:38 AM, Brennan, Thomas <Brennan.Thomas@epa.gov> wrote:

I agree Barbara,

Tom and I have the same concerns. During our initial meeting with our counterparts in OAR we learned a few things. This revised rule seems to be a policy compromise to fulfill some legal hurdles and not really an original air model exercise from scratch. This revision seems to be focused more on cost efficiencies, feasibility issues, and trading of costs based on the legal pushback to the original proposal. So it could be viewed as a policy piece that is built on a foundation of lots of data and air modeling runs.

Tom and I asked Leif Hockstad (OAR) to help clarify this and he is working on it today, along with the questions we sent. I will forward information as it comes in.

Tom Brennan
Director, Science Advisory Board Staff Office
US Environmental Protection Agency

Desk # 202 564 6953
Mobile # 703 581 9300

From: Barbara D. Beck <BBECK@gradientcorp.com>
Sent: Tuesday, November 24, 2020 9:30 AM
To: Graham, John D. <grahamjd@indiana.edu>; Brennan, Thomas <Brennan.Thomas@epa.gov>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>; Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: Re: [External] RE: Question on revised cross state rule

I don't feel I know enough to determine if we should even proceed. For example, do we have the expertise to perform such a review? Seems to be heavy duty air modeling.

Barbara

Barbara D. Beck, Ph.D., DABT, ATS
Principal
617-395-5518
bbeck@gradientcorp.com

Gradient's Cambridge office has relocated to Boston!

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From: John Graham <grahamid@indiana.edu>
Date: Monday, November 23, 2020 at 11:45 AM
To: Tom Brennan <Brennan.Thomas@epa.gov>
Cc: Barbara Beck <BBECK@gradientcorp.com>, "Johnston, Khanna"

<Johnston.Khanna@epa.gov>, Thomas Armitage <Armitage.Thomas@epa.gov>

Subject: Re: [External] RE: Question on revised cross state rule

I don't know enough about the issue to have an inclination. John

Sent from my iPhone

On Nov 23, 2020, at 9:50 AM, Brennan, Thomas
<Brennan.Thomas@epa.gov> wrote:

This message was sent from a non-IU address. Please exercise caution when clicking links or opening attachments from external sources.

I understand Barbara,

Sounds like you are leaning towards having a non-public meeting on the Board to get a briefing from OAR. Correct? John, thoughts?

Tom

From: Barbara D. Beck <BBECK@gradientcorp.com>
Sent: Monday, November 23, 2020 10:04 AM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>; Graham, John D. <grahamjd@indiana.edu>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>; Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: Re: Question on revised cross state rule

Thanks Tom,

I think it would still be worth getting more information before deciding. It is not clear to me that the "new rules" focus involved an intent to necessarily include "old rules".

I would like to better understand what the basis of the court ordered revision is.

John may have some additional comments.

Thanks

Barbara

Barbara D. Beck, Ph.D., DABT, ATS
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From: Tom Brennan <Brennan.Thomas@epa.gov>
Date: Monday, November 23, 2020 at 9:39 AM
To: John Graham <grahamjd@indiana.edu>, Barbara Beck <BBECK@gradientcorp.com>
Cc: "Johnston, Khanna" <Johnston.Khanna@epa.gov>, Thomas Armitage <Armitage.Thomas@epa.gov>
Subject: RE: Question on revised cross state rule

Wondering since this is a court ordered revision, if it is not in our scope? Historically SAB has only engaged EPA on newly proposed rules. Both our old process and the newly revised regulatory review process seem to have "new rules" as their purpose/focus. This is clearly a revision of a rule. Any thoughts on this before I have my meeting this afternoon?

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To: Graham, John D. <grahamjd@indiana.edu>; Barbara D. Beck <BBECK@gradientcorp.com>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>; Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: FW: Question on revised cross state rule

Some more info. I have a fact finding call with Leif today at 4.

From: Hockstad, Leif <Hockstad.Leif@epa.gov>
Sent: Monday, November 23, 2020 9:28 AM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>
Subject: RE: Question on revised cross state rule

Tom – Yes, the CSAPR rule is a separate rulemaking from the O3 NAAQS rulemaking. This current action is a court-ordered revision of the CSAPR rule and not a new rulemaking action per se. In fact the CSAPR rule has been undergoing court-ordered revisions for many years. I do not remember for sure, but the original rulemaking (maybe 10 years ago?) may have been presented to the SAB when it was originally proposed.

Thanks,
Leif

From: Brennan, Thomas <Brennan.Thomas@epa.gov>
Sent: Monday, November 23, 2020 8:34 AM
To: Shoaff, John <Shoaff.John@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>

Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>

Subject: Question on revised cross state rule

[https://www.epa.gov/csapr/revised-cross-state-air-pollution-rule-update#:~:text=On%20October%2015%2C%202020%2C%20EPA,Air%20Quality%20Standards%20\(NAAQS\).&text=EPA%20held%20a%20public%20hearing%20on%20November%2012%2C%202020.](https://www.epa.gov/csapr/revised-cross-state-air-pollution-rule-update#:~:text=On%20October%2015%2C%202020%2C%20EPA,Air%20Quality%20Standards%20(NAAQS).&text=EPA%20held%20a%20public%20hearing%20on%20November%2012%2C%202020.)

Hi John and Leif,

This rule is different from the O3 NAAQS standards correct? Wondering if this should be run by SAB? Thoughts?

Thanks,

Tom Brennan
Director, Science Advisory Board Staff Office
US Environmental Protection Agency

Desk # 202 564 6953
Mobile # 703 581 9300

Message

From: Brennan, Thomas [Brennan.Thomas@epa.gov]
Sent: 11/23/2020 4:49:01 PM
To: Graham, John D. [grahamjd@indiana.edu]
CC: Barbara D. Beck [BBECK@gradientcorp.com]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Armitage, Thomas [Armitage.Thomas@epa.gov]
Subject: RE: [External] RE: Question on revised cross state rule

Funny you should say this John and Tom A and I were talking today about how the expertise of the Board may not match this project very well (heavy in air modeling). It is closer to CASAC's role. CASAC did the NAAQS reviews already, and this is an implementation of those actions. Also, the timing of this is very tight, I think it may create serious challenges to conducting a timely and appropriate review.

Tom and I are meeting with our OAR counter parts today at 4. Will try to get some more clarity at that meeting.

Tom Brennan
Director, Science Advisory Board Staff Office
US Environmental Protection Agency

Desk # 202 564 6953
Mobile # 703 581 9300

From: Graham, John D. <grahamjd@indiana.edu>
Sent: Monday, November 23, 2020 11:44 AM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>
Cc: Barbara D. Beck <BBECK@gradientcorp.com>; Johnston, Khanna <Johnston.Khanna@epa.gov>; Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: Re: [External] RE: Question on revised cross state rule

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Subject: FW: Question on revised cross state rule

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To: Brennan, Thomas <Brennan.Thomas@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>

Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>

Subject: RE: Question on revised cross state rule

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Sent: Monday, November 23, 2020 8:34 AM

To: Shoaff, John <Shoaff.John@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>

Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>

Subject: Question on revised cross state rule

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Thanks,

Tom Brennan
Director, Science Advisory Board Staff Office
US Environmental Protection Agency

Desk # 202 564 6953
Mobile # 703 581 9300

Message

From: Brennan, Thomas [Brennan.Thomas@epa.gov]
Sent: 11/23/2020 1:44:32 PM
To: Graham, John D. [grahamjd@indiana.edu]; Barbara D. Beck [BBECK@gradientcorp.com]
CC: Armitage, Thomas [Armitage.Thomas@epa.gov]
Subject: RE: Revised cross state rule

Here is the FRN

<https://www.federalregister.gov/documents/2020/10/30/2020-23237/revised-cross-state-air-pollution-rule-update-for-the-2008-ozone-naaqs>

From: Brennan, Thomas
Sent: Monday, November 23, 2020 8:41 AM
To: Graham, John D. <grahamjd@indiana.edu>; Barbara D. Beck <BBECK@gradientcorp.com>
Cc: Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: Revised cross state rule

Hi John and Barbara,

https://www.epa.gov/sites/production/files/2020-10/documents/revised_csapr_update_factsheet_final.pdf

OAR has recently release a proposed rule regarding the cross state movement of ozone. I have attached a link to some info above. I have reached out to Office of Air and Radiation staff to get some information. I will circle back when I learn more.

Thanks,

Tom Brennan
Director, Science Advisory Board Staff Office
US Environmental Protection Agency

Desk # 202 564 6953
Mobile # 703 581 9300

Appointment

From: Brennan, Thomas [Brennan.Thomas@epa.gov]
Sent: 4/30/2020 2:28:43 PM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: DeBell, Kevin [debell.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]
Subject: Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference
Location: RRB 3rd floor SABSO office conf room -- 31169
Start: 5/6/2020 6:00:00 PM
End: 5/6/2020 7:00:00 PM
Show Time As: Free
Importance: High
Recurrence: Monthly
the first Wednesday of every 1 month(s) from 2:00 PM to 3:00 PM
Required Attendees: Armitage, Thomas; Johnston, Khanna; Wooden-Aguilar, Helena; Kloster, Andrew; Michael Honeycutt
Optional Attendees: DeBell, Kevin; Carpenter, Wesley

On the first Wednesday of each month the SABSO will hold this time for a subset of SAB members to receive briefings from the EPA on newly proposed tier 1 and tier 2 rules. The purpose of the briefings will be to determine if the SAB will conduct a review of the proposed rules. The meetings will be held in the conference room of the SAB Staff Office in the Ronald Reagan Building (room 31169). Based on the topics of the month, technical and management leads from the Offices proposing the rules will be invited.

Appointment

From: Brennan, Thomas [Brennan.Thomas@epa.gov]
Sent: 8/3/2020 1:03:56 PM
To: Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Armitage, Thomas [Armitage.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: DeBell, Kevin [debell.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]
Subject: Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference
Location: RRB 3rd floor SABSO office conf room -- 31169
Start: 8/5/2020 6:00:00 PM
End: 8/5/2020 7:00:00 PM
Show Time As: Free
Importance: High
Recurrence: Monthly
the first Wednesday of every 1 month(s) from 2:00 PM to 3:00 PM
Required Attendees: Wooden-Aguilar, Helena; Armitage, Thomas; Johnston, Khanna; Kloster, Andrew; Michael Honeycutt
Optional Attendees: DeBell, Kevin; Carpenter, Wesley

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From: Brennan, Thomas [Brennan.Thomas@epa.gov]
Sent: 4/30/2020 2:28:30 PM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: DeBell, Kevin [debell.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]
Subject: RE: SAB Monthly Regulatory Review Process Meeting - teleconference

There were no regulatory actions that require SAB review during the month of April, so I will cancel this meeting.

Tom

-----Original Appointment-----

From: Brennan, Thomas
Sent: Thursday, February 27, 2020 11:53 AM
To: Brennan, Thomas; Armitage, Thomas; Johnston, Khanna; Wooden-Aguilar, Helena; Kloster, Andrew; Michael Honeycutt
Cc: DeBell, Kevin; Carpenter, Wesley
Subject: SAB Monthly Regulatory Review Process Meeting - teleconference
When: Wednesday, May 06, 2020 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: RRB 3rd floor SABSO office conf room -- 31169

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Message

From: Brennan, Thomas [Brennan.Thomas@epa.gov]
Sent: 3/31/2020 7:31:20 PM
To: Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]; Armitage, Thomas [Armitage.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]
CC: DeBell, Kevin [debell.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]
Subject: RE: SAB Monthly Regulatory Review Process Meeting - teleconference

I am cancelling the meeting tomorrow. An analysis of the Tier 1 and 2 regulatory actions showed only one item. That item is already under SAB review so there is no reason to meet this week. We will run the process again monthly moving forward.

Best,

Tom

-----Original Appointment-----

From: Brennan, Thomas
Sent: Thursday, February 27, 2020 11:53 AM
To: Michael Honeycutt; Brennan, Thomas; Armitage, Thomas; Johnston, Khanna; Wooden-Aguilar, Helena; Kloster, Andrew
Cc: DeBell, Kevin; Carpenter, Wesley
Subject: SAB Monthly Regulatory Review Process Meeting - teleconference
When: Wednesday, April 01, 2020 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: RRB 3rd floor SABSO office conf room -- 31169

On the first Wednesday of each month the SABSO will hold this time for a subset of SAB members to receive briefings from the EPA on newly proposed tier 1 and tier 2 rules. The purpose of the briefings will be to determine if the SAB will conduct a review of the proposed rules. The meetings will be held in the conference room of the SAB Staff Office in the Ronald Reagan Building (room 31169). Based on the topics of the month, technical and management leads from the Offices proposing the rules will be invited.

Message

From: Michael Honeycutt [Michael.Honeycutt@tceq.texas.gov]
Sent: 6/15/2020 5:07:01 PM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]; DOERING, OTTO [doering@purdue.edu]
CC: Brennan, Thomas [Brennan.Thomas@epa.gov]
Subject: Re: New EPA proposed benefit cost rule

Thanks, Otto.

The timing on this is interesting. The Board is now reviewing three projects that likely fit underneath this rule: EPA's update to their economic analysis guidelines, the reduced form tools for air rules, and the SAGE model. I've asked the chairs of each of these subpanels to join us for the briefing on the proposed rule. If we decide to review the proposed rule, we would not be able to complete the review before the end of the public comment period. However, I'm sure we could finish it in time to offer EPA substantive comments before they publish a second draft or the final rule.

Let me know if you have any thoughts or concerns.

Take care,
Mike

From: Armitage, Thomas <Armitage.Thomas@epa.gov>
Sent: Monday, June 15, 2020 11:28 AM
To: DOERING, OTTO <doering@purdue.edu>
Cc: Brennan, Thomas <Brennan.Thomas@epa.gov>; Michael Honeycutt <Michael.Honeycutt@tceq.texas.gov>
Subject: RE: New EPA proposed benefit cost rule

Otto,

Thank you for your reply. The proposed rule was published in the Federal Register on June 11th. The EPA has requested public comments and will be holding one or more virtual public hearings on the proposed rulemaking.

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
202-565-2098 (fax)
armitage.thomas@epa.gov

From: DOERING, OTTO <doering@purdue.edu>
Sent: Monday, June 15, 2020 11:21 AM
To: Armitage, Thomas <Armitage.Thomas@epa.gov>
Cc: Brennan, Thomas <Brennan.Thomas@epa.gov>; Michael Honeycutt <Michael.honeycutt@tceq.texas.gov>
Subject: Re: New EPA proposed benefit cost rule

Tom,

I will help Mike however I can.

Given that this is a notice of a proposed rule, what is the timeline before the actual rule is put into the Federal register?

Are we on a time track where the SAB would not be able to undertake a review before a final rule is likely put into the Federal register or even put in place?

Thanks,

Otto

From: Armitage, Thomas <Armitage.Thomas@epa.gov>

Sent: Friday, June 12, 2020 6:05 PM

To: DOERING, OTTO <doering@purdue.edu>

Cc: Brennan, Thomas <Brennan.Thomas@epa.gov>

Subject: New EPA proposed rule

Dear Otto,

In accordance with the new process for SAB review of proposed regulatory actions, the SAB Office will soon be scheduling a non-public teleconference for the SAB chair to receive a briefing on the proposed EPA rule identified below. Dr. Honeycutt would like to invite you to attend this teleconference in order to provide advice on whether the proposed rule merits SAB review. Please send me a reply to indicate whether you would be willing to participate in the teleconference. I will provide information about the day and time of the teleconference when it is available.

At the teleconference, EPA staff will present a briefing on the proposed rule titled: "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process." This proposed rule is available on the EPA website at the following URL:

https://www.epa.gov/sites/production/files/2020-06/documents/consistent_transparent_bca_fr_notice_final_pre-pub_0.pdf

As indicated in the EPA document, "Science Advisory Board Engagement Process for Review of Regulatory Actions," the goals of the upcoming non-public teleconference are to (a) provide an interactive briefing for the SAB Chair on the proposed regulatory action; (b) discuss any potential EPA plan for consulting with other advisory committee(s); (c) discuss whether the proposed regulatory action merits SAB review; and (d) for those proposed regulatory actions that may merit SAB review, identify specific scientific topics within the rule, a timeline for the review, and whether it is best reviewed by the full SAB, a standing committee, or an ad hoc committee.

I look forward to receiving your reply,

Regards,

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer

EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
202-565-2098 (fax)
armitage.thomas@epa.gov

Message

From: Michael Honeycutt [Michael.Honeycutt@tceq.texas.gov]
Sent: 6/12/2020 11:28:11 PM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]
Subject: Re: BCA rule

Let's try Richard and Tony. If one of them can't make it, then try Mara.

Have a great weekend,
Mike

On Jun 12, 2020, at 5:28 PM, Armitage, Thomas <Armitage.Thomas@epa.gov> wrote:

Mike,

The new process document says we can invite eight SAB members to the meeting.. We already have invited six. Please let me know who the additional two should be.

Thanks,

Tom A.

From: Michael Honeycutt <Michael.Honeycutt@tceq.texas.gov>
Sent: Friday, June 12, 2020 6:02 PM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>; Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: BCA rule

Hey Tom and Tom,

I've thought a bit about this and think we should add a human health risk assessor to the group for the briefing on July 1. The proposed rule talks about quantifying health endpoints with c/r functions (page 35). Most economists don't do this. I was thinking Tony Cox, Richard Smith, or Mara Seeley might be helpful. We could ask one of them to join us, depending on their availability.

Thanks and have a great weekend!
Mike

Message

From: Brennan, Thomas [Brennan.Thomas@epa.gov]
Sent: 6/12/2020 10:13:39 PM
To: Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: Armitage, Thomas [Armitage.Thomas@epa.gov]
Subject: Re: BCA rule

Thanks Mike,

That makes good sense. Tom please add these members.

Tom

Sent from my iPhone

On Jun 12, 2020, at 6:02 PM, Michael Honeycutt <Michael.honeycutt@tceq.texas.gov> wrote:

Hey Tom and Tom,

I've thought a bit about this and think we should add a human health risk assessor to the group for the briefing on July 1. The proposed rule talks about quantifying health endpoints with c/r functions (page 35). Most economists don't do this. I was thinking Tony Cox, Richard Smith, or Mara Seeley might be helpful. We could ask one of them to join us, depending on their availability.

Thanks and have a great weekend!

Mike

Message

From: Brennan, Thomas [Brennan.Thomas@epa.gov]
Sent: 6/11/2020 5:16:09 PM
To: Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: Armitage, Thomas [Armitage.Thomas@epa.gov]
Subject: Newly proposed rule to discuss tomorrow

https://www.epa.gov/sites/production/files/2020-06/documents/consistent_transparent_bca_fr_notice_final_pre-pub_0.pdf

Hi Mike,

Looking forward to talking with you tomorrow. We have several items to discuss including:

- 1) An update from Aaron Yeow on how the ZOOM meeting will work;
- 2) A discussion on some concerns raised about the AALM model review – we need your advice.
- 3) A discussion of how you envision the Human Toxicity Guidelines will play out;
- 4) I have asked a new hire of our Carolyn Kilgore (a new scientists DFO we got from a Peace Corp list) so she can meet you and listen in on how we prepare for meetings;
- 5) And, a new proposed rule that was posted on the EPA web site (link attached above).

On the rule—the Agency’s big Offices (like Air, Water, OCSPP, OLEM..) are each going to put a rule out describing how they will conduct benefits cost analysis for each Office. This is the first to go out and is from Air and Radiation – it is a Tier 1 rule. Members of the Economic Guidelines Panel saw this and immediately asked to wrap it into their discussions. I told them no as it was out of scope of their peer review and they made the request 1 day before the 4th and final call of the team. I also said no, because we recently put a process in place for evaluating regulatory actions through the Chartered SAB, so I think the Panel is the wrong venue and I really want us to follow our new process to the letter. The reason I bring this level of detail up, is that it seems pretty clear that the economists on the panel (including Graham and Williams from the SAB) thought this was worth of review. I know its your call, but that was a good indicator.

My suggestion for you is to review this proposed rule, and see if this is a “no brainer” for us to at a minimum begin the process of a non-public briefing of a sub set of the Board. If you deem it is, Tom A and I can start the process of pulling that meeting together for Wednesday July 1st. On the SABSO end we will make the request for an EPA briefing. On your end, you will need to think about who you would like to join you in the meeting. My recommendation is all the economists on the Board (I think we have 5). We can discuss further tomorrow.

Tom Brennan
Director, Science Advisory Board Staff Office
US Environmental Protection Agency

Desk # 202 564 6953
Mobile # 703 581 9300

Appointment

From: Brennan, Thomas [Brennan.Thomas@epa.gov]
Sent: 9/1/2020 2:48:52 PM
To: Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Armitage, Thomas [Armitage.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: DeBell, Kevin [deb主.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]
Subject: Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference
Location: RRB 3rd floor SABSO office conf room -- 31169
Start: 9/2/2020 6:00:00 PM
End: 9/2/2020 7:00:00 PM
Show Time As: Free
Importance: High
Recurrence: Monthly
the first Wednesday of every 1 month(s) from 2:00 PM to 3:00 PM
Required Attendees: Wooden-Aguilar, Helena; Armitage, Thomas; Johnston, Khanna; Kloster, Andrew; Michael Honeycutt
Optional Attendees: DeBell, Kevin; Carpenter, Wesley

On the first Wednesday of each month the SABSO will hold this time for a subset of SAB members to receive briefings from the EPA on newly proposed tier 1 and tier 2 rules. The purpose of the briefings will be to determine if the SAB will conduct a review of the proposed rules. The meetings will be held in the conference room of the SAB Staff Office in the Ronald Reagan Building (room 31169). Based on the topics of the month, technical and management leads from the Offices proposing the rules will be invited.

Appointment

From: Brennan, Thomas [Brennan.Thomas@epa.gov]
Sent: 5/21/2020 1:55:51 PM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: DeBell, Kevin [debell.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]
Subject: Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference
Location: RRB 3rd floor SABSO office conf room -- 31169
Start: 6/3/2020 6:00:00 PM
End: 6/3/2020 7:00:00 PM
Show Time As: Free
Importance: High
Recurrence: Monthly
the first Wednesday of every 1 month(s) from 2:00 PM to 3:00 PM
Required Attendees: Armitage, Thomas; Johnston, Khanna; Wooden-Aguilar, Helena; Kloster, Andrew; Michael Honeycutt
Optional Attendees: DeBell, Kevin; Carpenter, Wesley

On the first Wednesday of each month the SABSO will hold this time for a subset of SAB members to receive briefings from the EPA on newly proposed tier 1 and tier 2 rules. The purpose of the briefings will be to determine if the SAB will conduct a review of the proposed rules. The meetings will be held in the conference room of the SAB Staff Office in the Ronald Reagan Building (room 31169). Based on the topics of the month, technical and management leads from the Offices proposing the rules will be invited.

Message

From: Michael Honeycutt [Michael.Honeycutt@tceq.texas.gov]
Sent: 3/27/2020 5:54:28 PM
To: Brennan, Thomas [Brennan.Thomas@epa.gov]
CC: Armitage, Thomas [Armitage.Thomas@epa.gov]
Subject: Re: Reg review projects update.

Thanks!

> On Mar 27, 2020, at 12:15 PM, Brennan, Thomas <Brennan.Thomas@epa.gov> wrote:
>
>
> Hi Mike and Tom,
>
> Alisa from SABSO was trained on how to search for recent Tier 1&2 actions inside an OP database. She
did the run today from 2/1 to present. The only result was the supplemental S&T rule which we are
already working on. So no need for any further action this month.
>
> Tom
>
>
> Sent from my iPhone

Message

From: Brennan, Thomas [Brennan.Thomas@epa.gov]
Sent: 5/21/2020 1:48:37 PM
To: Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]; Armitage, Thomas [Armitage.Thomas@epa.gov]
CC: Johnston, Khanna [Johnston.Khanna@epa.gov]
Subject: RE: Can you run another round of the Tier 1 and 2 regulatory actions around EPA? Thanks!

I will let OAR know we agree that this is not right for SAB.

From: Michael Honeycutt <Michael.Honeycutt@tceq.texas.gov>
Sent: Thursday, May 21, 2020 9:39 AM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>; Armitage, Thomas <Armitage.Thomas@epa.gov>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>
Subject: Re: Can you run another round of the Tier 1 and 2 regulatory actions around EPA? Thanks!

From my quick scan, I agree.

Mike

From: Brennan, Thomas <Brennan.Thomas@epa.gov>
Sent: Thursday, May 21, 2020 8:21 AM
To: Michael Honeycutt <Michael.Honeycutt@tceq.texas.gov>; Armitage, Thomas <Armitage.Thomas@epa.gov>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>
Subject: FW: Can you run another round of the Tier 1 and 2 regulatory actions around EPA? Thanks!

Hi Mike and Tom,

A review of new Tier 1&2 proposed rules for this month turned up one item. I have attached an e-mail chain I had with OAR. After reviewing the materials (in the link from Leif) it seems to me that this involves no science matters. Forwarded along to you both in case I am missing something. Please review and let me know if you concur that this is not appropriate for an SAB review.

Thanks,

Tom Brennan
Director, Science Advisory Board Staff Office
US Environmental Protection Agency

Desk # 202 564 6953
Mobile # 703 581 9300

From: Hockstad, Leif <Hockstad.Leif@epa.gov>
Sent: Wednesday, May 20, 2020 5:24 PM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>; Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: RE: Can you run another round of the Tier 1 and 2 regulatory actions around EPA? Thanks!

Tom –

The “Fuels Regulatory Streamlining” action does not involve new science and is merely cleaning up regulations on the transportation sector. I checked with our OAR colleagues in OTAQ and they said this is being done to reduce redundancy and overlap in regulations and will not involve new science.

OTAQ has posted more information, including the rule summary, on this action at:

<https://www.epa.gov/diesel-fuel-standards/notice-proposed-rulemaking-streamlining-and-consolidating-existing-gasoline>

Thanks,
Leif

LEIF HOCKSTAD | LEADER, POLICY SUPPORT GROUP
OFFICE OF AIR POLICY & PROGRAM SUPPORT (OAPPS)
OFFICE OF AIR & RADIATION | U.S. EPA | WJC NORTH 5442B
1200 PENNSYLVANIA AVE. NW | MC 6103A | WASHINGTON, D.C. | 20460 | USA
Hockstad.Leif@epa.gov | 1-202-343-9432

From: Brennan, Thomas <Brennan.Thomas@epa.gov>
Sent: Wednesday, May 20, 2020 8:35 AM
To: Shoaff, John <Shoaff.John@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>; Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: FW: Can you run another round of the Tier 1 and 2 regulatory actions around EPA? Thanks!

Hi John and Leif,

When SABSO conducts our regulatory review process, we start by searching OP’s database of new actions. Our now routine search for tier 1 and 2 regulatory actions turned up this OAR project. We have a meeting scheduled for the first week of June. Before I start the full process, I wanted to check in and see what you can share about this action and do a “first screen” to see if it is science-based and potentially worthy of an SAB discussion. Can you get back to me by this Friday with a summary of your impressions of this action as it related to our regulatory review process?

Thanks,

Tom Brennan
Director, Science Advisory Board Staff Office
US Environmental Protection Agency

Desk # 202 564 6953
Mobile # 703 581 9300

From: Fisher, Alisa <Fisher.Alisa@epa.gov>
Sent: Tuesday, May 19, 2020 7:06 PM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>
Subject: RE: Can you run another round of the Tier 1 and 2 regulatory actions around EPA? Thanks!

Please see the attached.

Thanks

Alisa Fisher
Science Advisory Board (31164)
1300 Pennsylvania Ave., NW
Washington, DC 20460-0001
Fisher.Alisa@epa.gov
(202) 564-2122 Phone
(202) 565-2098 Fax

From: Brennan, Thomas <Brennan.Thomas@epa.gov>
Sent: Tuesday, May 19, 2020 3:26 PM
To: Fisher, Alisa <Fisher.Alisa@epa.gov>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>
Subject: Can you run another round of the Tier 1 and 2 regulatory actions around EPA? Thanks!

Tom Brennan
Director, Science Advisory Board Staff Office
US Environmental Protection Agency

Desk # 202 564 6953
Mobile # 703 581 9300

Message

From: Michael Honeycutt [Michael.Honeycutt@tceq.texas.gov]
Sent: 7/10/2020 6:54:46 PM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]; DOERING, OTTO [doering@purdue.edu]; Cox, Tony [tcoxdenver@aol.com]; Smith, Richard L [rls@email.unc.edu]; Peter Wilcoxon [wilcoxon@maxwell.syr.edu]; Richard Williams [rwilliav123@gmail.com]; jrturner@wustl.edu
CC: Brennan, Thomas [Brennan.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Stallworth, Holly [Stallworth.Holly@epa.gov]
Subject: Re: Reminder and additional material for the July 10th teleconference to discuss SAB review of EPA's proposed benefit-cost rule

Thank you all for your help today. I appreciate your expertise and insights.

Have a great weekend,
Mike

From: Armitage, Thomas <Armitage.Thomas@epa.gov>
Sent: Thursday, July 9, 2020 12:50 PM
To: DOERING, OTTO <doering@purdue.edu>; Cox, Tony <tcoxdenver@aol.com>; Smith, Richard L <rls@email.unc.edu>; Peter Wilcoxon <wilcoxon@maxwell.syr.edu>; Richard Williams <rwilliav123@gmail.com>; jrturner@wustl.edu <jrturner@wustl.edu>; Michael Honeycutt <Michael.Honeycutt@tceq.texas.gov>
Cc: Brennan, Thomas <Brennan.Thomas@epa.gov>; Johnston, Khanna <Johnston.Khanna@epa.gov>; Stallworth, Holly <Stallworth.Holly@epa.gov>
Subject: Reminder and additional material for the July 10th teleconference to discuss SAB review of EPA's proposed benefit-cost rule

All,

This is a reminder that we will be holding a teleconference tomorrow, **Friday, July 10th from 1:00 – 3:00 p.m. (Eastern Time)** to discuss whether the SAB should review EPA's proposed rule titled "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process." Attached please find an overview of the proposed rule provided by the Office of Air and Radiation for the teleconference. I have also attached the teleconference agenda.

To join the teleconference, please call the following conference number **1-866-299-3188** and **enter the conference code 2023439995#** at the prompt.

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

Message

From: tcoxdenver@aol.com [tcoxdenver@aol.com]
Sent: 7/9/2020 4:46:30 PM
To: Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]; rls@email.unc.edu
CC: Armitage, Thomas [Armitage.Thomas@epa.gov]
Subject: Re: tomorrow's meeting

Thanks, Mike!

This brings up the crucial issue of exactly what is mean by "link" and "concentration-response function" in "establishing a link between chemical exposure and health endpoint and the nature of the concentration-response function." (Do they intend a C-R function to mean a regression curve describing observations of concentration and response levels in past data, or a causal model curve describing how changing exposure concentration would change future responses?) I guess the EPA must be pretty tired of hearing from me about the importance of distinguishing between these two very distinct concepts, and they have not done so in the CFR write-up, but I still think that sensible discussion requires some clarity about what we are talking about. It also seems clear to me that causal C-R functions are what policy makers usually need, and that regression C-R functions are what EPA usually produces, so there may be an opportunity to help bridge that gap.

Best,

— Tony

-----Original Message-----

From: Michael Honeycutt <Michael.Honeycutt@tceq.texas.gov>
To: rls@email.unc.edu <rls@email.unc.edu>; tcoxdenver@aol.com <tcoxdenver@aol.com>
Cc: Armitage, Thomas <Armitage.Thomas@epa.gov>
Sent: Thu, Jul 9, 2020 8:13 am
Subject: tomorrow's meeting

Hi Richard and Tony,

Thanks for participating in tomorrow's call. The primary reason I asked for you two to participate is that the rule specifically addresses quantifying health endpoints in benefit cost analysis. This section starts on page 35620 of the attached proposed rule. We will have several SAB members who are economists at the meeting to look at the economic principles addressed by the rule, but please feel free to offer your opinions in those areas if you'd like.

Thanks again,
Mike

Appointment

From: Brennan, Thomas [Brennan.Thomas@epa.gov]
Sent: 10/1/2020 11:56:52 AM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: DeBell, Kevin [debell.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]
Subject: Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference
Location: RRB 3rd floor SABSO office conf room -- 31169
Start: 4/1/2020 6:00:00 PM
End: 4/1/2020 7:00:00 PM
Show Time As: Free
Importance: High
Recurrence: Monthly
the first Wednesday of every 1 month(s) from 2:00 PM to 3:00 PM
Required Attendees: Armitage, Thomas; Johnston, Khanna; Wooden-Aguilar, Helena; Kloster, Andrew; Michael Honeycutt
Optional Attendees: DeBell, Kevin; Carpenter, Wesley

On the first Wednesday of each month the SABSO will hold this time for a subset of SAB members to receive briefings from the EPA on newly proposed tier 1 and tier 2 rules. The purpose of the briefings will be to determine if the SAB will conduct a review of the proposed rules. The meetings will be held in the conference room of the SAB Staff Office in the Ronald Reagan Building (room 31169). Based on the topics of the month, technical and management leads from the Offices proposing the rules will be invited.

Message

From: Armitage, Thomas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=06E0B9190F534CF0B6E34DA284081A14-ARMITAGE, TOM]
Sent: 7/6/2020 9:39:53 PM
To: DOERING, OTTO [doering@purdue.edu]; Cox, Tony [tcoxdenver@aol.com]; Smith, Richard L [rls@email.unc.edu]; Peter Wilcoxon [wilcoxon@maxwell.syr.edu]; Richard Williams [rwilliav123@gmail.com]; jrturner@wustl.edu; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: Brennan, Thomas [Brennan.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Stallworth, Holly [Stallworth.Holly@epa.gov]
Subject: July 10th teleconference to discuss SAB review of EPA's proposed benefit-cost rule - Call in number and materials
Attachments: Agenda for SAB Reg Review Briefing teleconference_07_10_20.pdf; Questions+to+be+Considered.pdf

All,

Attached please find the agenda and other materials for the teleconference with Dr. Honeycutt on Friday, July 10th to discuss whether the SAB should review EPA's proposed rule titled "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process." **The teleconference will be held on Friday, July 10, 2020 from 1:00 – 3:00 p.m. (Eastern Time).** To join the teleconference, please call the following conference number **1-866-299-3188 and enter the conference code 2023439995#** at the prompt.

The following materials are provided for the teleconference:

1. The teleconference agenda is attached.
2. A memorandum from EPA Administrator Wheeler titled "Science Advisory Board Engagement Process for Review of regulatory Actions" is available on the SAB website at the following URL:

[https://yosemite.epa.gov/sab/sabproduct.nsf/WebBOARD/RegReviewProcess/\\$File/SAB%20Engagement%20Process%20re%20Regulatory%20Actions.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/WebBOARD/RegReviewProcess/$File/SAB%20Engagement%20Process%20re%20Regulatory%20Actions.pdf)
3. A list of questions considered by the SAB in deciding whether to review the scientific and technical basis of a proposed rule is attached.
4. The proposed rule titled "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process" is available in the EPA Docket at the following URL:

<https://www.regulations.gov/document?D=EPA-HQ-OAR-2020-0044-0001>

I look forward to talking with you on Friday.

Regards,

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

**U.S. Environmental Protection Agency
Science Advisory Board
EPA Teleconference with the Chair of the Science Advisory Board
Friday, July 10, 2020
1:00 – 3:00 p.m., Eastern Time**

**Call-in number: 1-866-299-3188
Conference code: 2023439995#**

AGENDA

Purpose: The Office of Air and Radiation will brief the Science Advisory Board (SAB) Chair, Dr. Michael Honeycutt, and six members of the SAB on EPA’s proposed rule titled “Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process.” Dr. Honeycutt and SAB members will discuss: whether the proposed rule merits SAB review; specific scientific topics within the rule; and the timeline for possible SAB review of the rule.

1:00 p.m.	Convene Teleconference	Dr. Thomas Armitage Designated Federal Officer SAB Staff Office
1:05 p.m.	Purpose of the Teleconference	Mr. Thomas Brennan Director, SAB Staff Office
1:10 p.m.	EPA Presentation on the Proposed Rule Titled “Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process”	Mr. Leif Hockstad and Other Staff from EPA’s Office of Air and Radiation
1:30 p.m.	Questions on the Proposed Rule from SAB Chair and Members	Dr. Michael Honeycutt, Chair, EPA Science Advisory Board and SAB Members
	Discussion of Whether the Proposed Rule Merits SAB Review; Specific Scientific Topics Within the Rule; and the Timeline for Possible SAB Review of the Rule.	Dr. Honeycutt and SAB Members
3:00 p.m.	Adjourn	

Questions to be Considered in Deciding Whether the SAB Should Review the Scientific and Technical Basis of a Proposed Rule

1. Is the action under review by the SAB or is SAB review planned? If not, has EPA identified other high-level external peer review (e.g., by the National Academy of Sciences, Clean Air Scientific Advisory Committee, or Federal Insecticide Fungicide, and Rodenticide Act Scientific Advisory Panel)?
2. Is the action primarily administrative (i.e., involves reporting or record keeping)?
3. Has EPA characterized the action as one that has “an influential scientific or technical work product” that “has a major impact, involves precedential, novel, and/or controversial issues, or does the Agency have a legal and/or statutory obligation to conduct a peer review?”
4. Is the action an extension of an existing initiative?

Consider whether the action merits a high, medium, or low level of interest regarding the following criteria.

- Involves scientific approaches that are new to the Agency.
- Addresses areas of substantial uncertainty.
- Involves major environmental risks.
- Relates to emerging environmental issues.
- Exhibits a long-term outlook.

Message

From: Armitage, Thomas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=06E0B9190F534CF0B6E34DA284081A14-ARMITAGE, TOM]
Sent: 6/26/2020 4:50:15 PM
To: Graham, John D. [grahamjd@indiana.edu]
Subject: RE: [External] Please send information about your availability on July 9th and 10th for a teleconference

Thank you.

From: Graham, John D. <grahamjd@indiana.edu>
Sent: Friday, June 26, 2020 11:09 AM
To: Armitage, Thomas <Armitage.Thomas@epa.gov>
Cc: DOERING, OTTO <doering@purdue.edu>; Cox, Tony <tcxdenver@aol.com>; Smith, Richard L <rls@email.unc.edu>; jrturner@wustl.edu; Peter Wilcoxon <wilcoxon@maxwell.syr.edu>; Richard Williams <rwilliav123@gmail.com>
Subject: Re: [External] Please send information about your availability on July 9th and 10th for a teleconference

Tom. Alas I am out of pocket both July 9 and 10. The joys of summer. You can proceed without me. I think it is obvious that parts of this proposal require SAB review but we need to move more promptly than usual to be relevant. John

Sent from my iPhone

On Jun 25, 2020, at 2:00 PM, Armitage, Thomas <Armitage.Thomas@epa.gov> wrote:

This message was sent from a non-IU address. Please exercise caution when clicking links or opening attachments from external sources.

All

Thank you for your willingness to participate in a teleconference with Dr. Honeycutt to discuss whether the proposed EPA rule, "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process" merits SAB review. We would like to schedule a two-hour teleconference for you to receive a briefing on the proposed rule and discuss whether it should be reviewed by the SAB. Please send me a reply indicating your availability between 12:00 noon and 5:00 p.m. (Eastern Time) on the following days for the teleconference.

July 9

July 10

Thanks very much,

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

Message

From: Armitage, Thomas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=06E0B9190F534CF0B6E34DA284081A14-ARMITAGE, TOM]
Sent: 6/25/2020 9:13:48 PM
To: Michael Honeycutt [Michael.Honeycutt@tceq.texas.gov]
Subject: RE: Reg Review for economic analysis rule

Thank you Mike.

From: Michael Honeycutt <Michael.Honeycutt@tceq.texas.gov>
Sent: Thursday, June 25, 2020 12:40 PM
To: Armitage, Thomas <Armitage.Thomas@epa.gov>; Brennan, Thomas <Brennan.Thomas@epa.gov>
Subject: Re: Reg Review for economic analysis rule

Hi Tom,

I'm available either day.

Thanks,
Mike

From: Armitage, Thomas <Armitage.Thomas@epa.gov>
Sent: Thursday, June 25, 2020 11:33 AM
To: Michael Honeycutt <Michael.Honeycutt@tceq.texas.gov>; Brennan, Thomas <Brennan.Thomas@epa.gov>
Subject: RE: Reg Review for economic analysis rule

Mike,

The Office of Air and Radiation would like to hold the briefing on July 9 or 10. We should probably schedule a two hour call. Are you free for two hours in the afternoon of July 9 and 10?

Tom A.

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

From: Michael Honeycutt <Michael.Honeycutt@tceq.texas.gov>
Sent: Thursday, June 25, 2020 12:06 PM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>; Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: Reg Review for economic analysis rule

Have we finalized the briefing? No rest for the weary!

Mike

Message

From: Armitage, Thomas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=06E0B9190F534CF0B6E34DA284081A14-ARMITAGE, TOM]
Sent: 6/25/2020 8:59:59 PM
To: DOERING, OTTO [doering@purdue.edu]; Cox, Tony [tcoxdenver@aol.com]; Graham, John D. [grahamjd@indiana.edu]; Smith, Richard L [rls@email.unc.edu]; jrturner@wustl.edu; Peter Wilcoxon [wilcoxon@maxwell.syr.edu]; Richard Williams [rwilliav123@gmail.com]
Subject: Please send information about your availability on July 9th and 10th for a teleconference

All

Thank you for your willingness to participate in a teleconference with Dr. Honeycutt to discuss whether the proposed EPA rule, "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process" merits SAB review. We would like to schedule a two-hour teleconference for you to receive a briefing on the proposed rule and discuss whether it should be reviewed by the SAB. Please send me a reply indicating your availability between 12:00 noon and 5:00 p.m. (Eastern Time) on the following days for the teleconference.

July 9

July 10

Thanks very much,

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

Message

From: Armitage, Thomas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=06E0B9190F534CF0B6E34DA284081A14-ARMITAGE, TOM]
Sent: 6/19/2020 12:41:27 PM
To: Graham, John D. [grahamjd@indiana.edu]
Subject: RE: [External] New EPA proposed rule

Thank you John.

From: Graham, John D. <grahamjd@indiana.edu>
Sent: Friday, June 12, 2020 7:07 PM
To: Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: Re: [External] New EPA proposed rule

Tom. I am happy to join the call. John

Sent from my iPhone

On Jun 12, 2020, at 3:07 PM, Armitage, Thomas <Armitage.Thomas@epa.gov> wrote:

This message was sent from a non-IU address. Please exercise caution when clicking links or opening attachments from external sources.

Dear John,

In accordance with the new process for SAB review of proposed regulatory actions, the SAB Office will soon be scheduling a non-public teleconference for the SAB chair to receive a briefing on the proposed EPA rule identified below. Dr. Honeycutt would like to invite you to attend this teleconference in order to provide advice on whether the proposed rule merits SAB review. Please send me a reply to indicate whether you would be willing to participate in the teleconference. I will provide information about the day and time of the teleconference when it is available.

At the teleconference, EPA staff will present a briefing on the proposed rule titled: "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process." This proposed rule is available on the EPA website at the following URL:

https://www.epa.gov/sites/production/files/2020-06/documents/consistent_transparent_bca_fr_notice_final_pre-pub_0.pdf

As indicated in the EPA document, "Science Advisory Board Engagement Process for Review of Regulatory Actions," the goals of the upcoming non-public teleconference are to (a) provide an interactive briefing for the SAB Chair on the proposed regulatory action; (b) discuss any potential EPA plan for consulting with other advisory committee(s); (c) discuss whether the proposed regulatory action merits SAB review; and (d) for those proposed regulatory actions that may merit SAB review, identify specific scientific topics within the rule, a timeline for the review, and whether it is best reviewed by the full SAB, a standing committee, or an ad hoc committee.

I look forward to receiving your reply,

Regards,

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

Preliminary Individual SAB Comments on EPA’s proposed rule titled “Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process”

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Dr. Tony Cox

Suggested areas and topics for review in EPA’s proposed rulemaking, “Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process”

[PAGE * MERGEFORMAT]

1. ***Assessing practical bounds on opportunity costs.*** True opportunity costs are seldom known. Evaluating three options is seldom sufficient to reveal the true opportunity cost of the recommended one. What should be done instead? (This addresses the sentence “Benefit-cost analysis (BCA) means an evaluation of the favorable effects of a policy action and the opportunity costs, associated with the action.”)
2. ***Use of compensation criteria.*** The description of the proposed approach in the CFR states that “It addresses the question whether the benefits for those who gain from the action are sufficient to, in principle, compensate those burdened such that everyone would be at least as well off as before the policy.” This appears to ignore the Scitovsky critique of Kaldor-Hicks efficiency, and other logical inconsistencies in compensation criteria ([[HYPERLINK "https://en.wikipedia.org/wiki/Kaldor%E2%80%93Hicks_efficiency"](https://en.wikipedia.org/wiki/Kaldor%E2%80%93Hicks_efficiency) \I "Criticisms"]). Can the proposed approach be applied without mentioning or using compensation criteria?
3. ***Definition of economic efficiency under uncertainty.*** Does the EPA mean to use Kaldor-Hicks efficiency, Bayesian efficiency ([[HYPERLINK "https://en.wikipedia.org/wiki/Bayesian_efficiency"](https://en.wikipedia.org/wiki/Bayesian_efficiency)]), or something else? If there is uncertainty, then is ex post, ex ante, or interim efficiency intended? More generally, should the proposed approach to benefit-cost analysis be updated to reflect the reality and importance of incomplete information? (This is raised by “The calculation of net benefits (benefits minus costs) helps ascertain the economic efficiency of a regulation.”)
4. ***Definition of societal wellbeing under uncertainty.*** Impossibility theorems limit ability to define and measure “positive changes in societal well-being” when different people have different beliefs or preferences (e.g., Nehring, “The Impossibility of a Paretian Rational” [[HYPERLINK "http://faculty.econ.ucdavis.edu/faculty/nehring/papers/judgment%20aggregation/bayesian-paretian-rational-11-06-el.pdf"](http://faculty.econ.ucdavis.edu/faculty/nehring/papers/judgment%20aggregation/bayesian-paretian-rational-11-06-el.pdf)] ; see also [[HYPERLINK "https://www.jstor.org/stable/2027108?seq=1"](https://www.jstor.org/stable/2027108?seq=1)] .) Should EPA attempt to give a clear, coherent definition of “positive changes in societal well-being” and state the restrictions that make coherent definition possible (e.g., adopting the beliefs and preferences of a single “social dictator” as those of society?) This issue is raised by “Social benefits, or benefits, means the positive changes in societal well-being incurred as a result of the regulation or policy action.”

5. ***Forms for assessing aggregate social utility.*** The proposed rule implicitly assumes an additively separable social utility function, e.g., in saying “*Social costs, or costs, means the sum of all opportunity costs, or reductions in societal well-being, incurred as a result of the regulation or policy action.*” But rational group decisions with cardinal social welfare functions and uncertainty about costs and benefits may require multiplicative, rather than additive, social utility functions (e.g. Keeney and Kirkwood 1975, [[HYPERLINK "https://www.jstor.org/stable/2630106?seq=1"](https://www.jstor.org/stable/2630106?seq=1)] [[HYPERLINK "https://pubsonline.informs.org/doi/abs/10.1287/mnsc.22.4.430"](https://pubsonline.informs.org/doi/abs/10.1287/mnsc.22.4.430)]). The proposed benefit-cost approach should either justify the assumption of additively separable costs and benefits, or use a more general aggregation formula.
6. ***Comprehensiveness vs. dominant contributors.*** The CFR, p. 35626, requires “*To the extent feasible, an assessment of all benefits and costs of these regulatory options relative to the baseline scenario*” (emphasis added) But it is not clear how “the extent feasible” is to be determined, or what resources and conditions are to be assumed in defining what is feasible. Perhaps more importantly, it is usually not necessary or desirable to assess *all* benefits and costs. Confident decision-making in the public interest only requires putting bounds on the differences in values of different alternatives (e.g., focusing on dominant contributors and not further assessing costs and benefits that are too small to change comparisons among alternatives) (e.g., Fishburn PC, “Preference structures and their numerical representations,” [[HYPERLINK "http://www-db.deis.unibo.it/courses/SI-LS/papers/Fis99.pdf"](http://www-db.deis.unibo.it/courses/SI-LS/papers/Fis99.pdf)]).
7. ***Number of alternatives assessed.*** “*Where there is a continuum of options (such as options that vary in stringency), the Agency must analyze at least three.*” In order to identify opportunity costs, does one of the options have to be the next best alternative to the one recommended? If so, how should that next best alternative be identified? Also, if so, why analyze three options instead of two (viz., the recommended alternative and the next best one?)
8. ***Risk premiums for uncertain net benefits estimates.*** “*During the estimation of benefits, the Agency must link regulatory requirements to the value that individuals place on the change in benefit endpoints that can be meaningfully attributed to those requirements.*” Suppose that individuals have different degrees of risk-aversion and different beliefs (represented by

probability distributions) for the change in benefit endpoints. How should the expected net benefit be adjusted to account for risk aversion?

9. **Definition of causality.** The CFR states that *“The Agency must select benefit endpoints that [sic – this should probably be “for which”] the scientific evidence indicates there is: (i) A clear causal or likely causal relationship between pollutant exposure and effect, and subsequently [sic]; and (ii) An anticipated change in that effect in response to changes in environmental quality or exposures expected as a result of the regulation under analysis.”*

This provides a useful, explicit focus on manipulative or interventional causality, which is appropriate for informing interventions. But the weight-of-evidence (WoE) framework used in NAAQS reviews for the past decade defines “causal” and “likely to be causal” using very different, non-interventional (associational) criteria. For example, a determination of “likely to be causal” is warranted in the WoE framework by “evidence” that has no necessary relevance or likely implications for health effects of changing exposures, such as that “observational studies show an association, but copollutant exposures are difficult to address” (U.S. EPA [[HYPERLINK "https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=310244"](https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=310244)] and discussion in [[HYPERLINK "http://www.sciencedirect.com/science/article/pii/S2590113319300045?via%3Dihub"](http://www.sciencedirect.com/science/article/pii/S2590113319300045?via%3Dihub)]). Should the definitions of “causal” and “likely causal” to be used in assessing benefits be explicitly stated (e.g., as “changing exposure, holding other causally relevant variables fixed, changes response probabilities” and “it is unlikely, based on available data and results of hypothesis-tests, that changing exposure, holding other causally relevant variables fixed, does not change response probabilities,” respectively)? If an interventional (manipulative) definition of “causal” is intended, this should perhaps be stated even more explicitly, and distinguished from the association-based definitions in the WoE framework. If a goal is to replace the WoE framework with more causally relevant considerations with positive value-of-information (VOI) for improving regulatory decisions (even without considering costs), then perhaps this should be stated.

10. **Definition of concentration-response functions.** The CFR says that *“Once the Agency has identified the concentration-response functions to be used for quantifying the selected health endpoints, the Agency proposes that the BCA, or related technical support document, must characterize: The variability in the concentration response functions across studies and*

models, including plausible alternatives...Concentration-response functions must be parameterized from scientifically robust studies...” However, this does not distinguish between

- a. *Regression* concentration-response (C-R) functions describing the conditional expected value (or probability distribution) of R observed for different *observed* levels of C; and
- b. *Causal* C-R functions describing how *setting* C to different levels changes the distribution of R.

These two types of C-R functions are often very different (e.g., they can have slopes with different signs). The variability of interest should only be in causal C-R functions, not in regression C-R functions, which do not describe effects of interventions.

11. **External validity.** The CFR states that “*When an epidemiological study is used further criteria include that the study must assess the influence of confounders, that the study location must be appropriately matched to the analysis, and that the study population characteristics must be sufficiently similar to those of the analysis.*” The term “sufficient similarity” can be made more precise using criteria for external validity, generalization, and transportability ([[HYPERLINK "https://arxiv.org/pdf/1503.01603.pdf"](https://arxiv.org/pdf/1503.01603.pdf)]). If this is what is intended here, then it should be stated explicitly; otherwise, it is not clear exactly what “sufficiently similar” is intended to mean.
12. **Combining multiple studies.** The CFR states that “*When multiple studies satisfy these criteria the Agency must characterize multiple concentration response functions, and, if appropriate, combine them as a means of providing a broader representation of the effect estimate.*” It is not clear what this means. If multiple studies give significantly different C-R estimates, then they should not be combined: the inconsistency should be acknowledged, and uncertainty about the causal C-R function should be characterized. If the causal C-R functions are not found to violate the property of invariant causal prediction (ICP), then conditions under which they can be combined via transportation have been identified ([[HYPERLINK "https://en.wikipedia.org/wiki/Causal_model"](https://en.wikipedia.org/wiki/Causal_model) \I "Transportability"]). The discussion of combining results from multiple studies should be made more precise and explicit; for example, if it specifically means combination via transportation, then it should say so. The directive that “The Agency must base decisions about the choice of the number of alternative

concentration-response functions quantified for each endpoint on the extent to which it is technically feasible to quantify alternative concentration-response relationships given the available data and resources” does not address the fundamental issue of why (causal) C-R functions might differ (namely, some important variables that are direct causes of the response are not being measured, or there is model uncertainty or error in the conditional probability table or model describing how response probability depends on its direct causes). Best practice requires seeking to explain and reconcile differences in estimated causal effects (here, C-R functions) across studies, and characterizing remaining unexplained differences (e.g., Yang and Ding 2019, “Combining multiple observational data sources to estimate causal effects,” [[HYPERLINK "https://www.tandfonline.com/doi/abs/10.1080/01621459.2019.1609973?journalCode=uasa20"](https://www.tandfonline.com/doi/abs/10.1080/01621459.2019.1609973?journalCode=uasa20)]). This is not accomplished by simply averaging or otherwise combining discrepant estimates.

1. First, I would raise again the same question as Peter Wilcoxon and Richard Smith as to whether this rule is really necessary.
2. How does this rule specific to the Clean Air Act relate to the earlier transparency rule? Are they consistent?
3. Much of the proposed rule is on health aspects (like concentration) and risk and uncertainty. Following Richard's comment, it is difficult to ascertain how the rule might be applied. If the rule were applied stringently in these areas, it might represent a substantial and possibly paralyzing burden on the agency to meet the standards. Any extreme specificity of this rule could also become an effective lever for objections to a new proposed regulation.
4. I am concerned about the possibility of EPA having standards for Benefit Cost analysis that are different from the accepted standards of other agencies. To what extent does this proposed rule depart from OMB Circular A-4? There needs to be consistency and transparency across agencies.
5. I am concerned about the possible meaning of section 83.3(a)(7) that "during the estimation of benefits, the Agency must link regulatory requirements to the value that individuals place on the change in benefit endpoints that can be meaningfully attributed to those requirements." Can the term 'meaningfully' rule out ancillary benefits? This concern is in addition to and builds on Richard's concern with part 83.3(a)(9)(iii)(B) of the rule.
6. I also believe that a requirement for retrospective analysis could be burdensome and raises issues about unintended consequences.
7. I would follow Richard's judgment that section 83.4 does not require further review.

Dr. John Graham

I am in general agreement with the issues that others have raised as appropriate for SAB review. Based on my OMB-OIRA experience, I want to offer some context as to why a rule like this might be seen by some as necessary and appropriate, and why it is also likely to be controversial in the eyes of others. I conclude with some additional issues that SAB might address, since much of the context below are policy and legal themes.

I wholeheartedly agree with Peter that we should look carefully at whether each prescription in the proposed rule is consistent with best-practice CBA.

1. As several noted, EPA already has agency-wide guidelines for economic analysis (now under revision and SAB review). However, those guidelines are merely technical suggestions and are not legally binding on the agency. If a program office and the Administrator are willing to ignore them (and if OMB is not diligent and influential enough to force compliance with them), then a Clean air rulemaking may be issued with an RIA that does not adhere to the agency's or OMB guidelines.

2. As I read the proposed rule, it's underlying purpose is to legally bind the agency to the EPA and OMB CBA guidelines except of course where a statute does not permit CBA or forces adoption of a specific rule. Even in those cases, the proposed rule requires the agency to produce a best-practice CBA so that Congress and stakeholders are informed of costs and benefits.

3. The role of judicial review arises via the APA, which authorizes federal judicial Review of agency rules according to certain principles. This CBA initiative is an agency rule.

4. In my experience with EPA, the commitment to best-practice CBA varies among the program offices and over time depending on the presidential administration and the political personalities and career staff leaders at EPA and OMB and other agencies.

5. The EPA economic guidelines are generated primarily by the policy arm of EPA, where most of the Agency's economists are housed and where there are strong collaborative links to academics and think tank researchers with expertise in CBA. The program offices do have some good economists but their rulemakings are strongly influenced by the disciplines of engineering, science and law and the program specialists. While the program offices participate to varying degrees in the development of the guidelines, they are not nearly as influential as the policy arm of EPA in determining the content of the guidelines. In many cases, the program offices make rulemaking decisions and then ask the economists to prepare an RIA that defend the chosen rule. Richard Morgenstern of RFF prepared a useful book of case studies illustrating this dynamic at the agency.

6. Among the program offices, I would say that the air office has perhaps the strongest commitment to good economic analysis. Nonetheless, based on reviewing numerous rulemakings from the air office, I know that the quality of the CBAs coming from the air office are of uneven quality. The proposed rule is not explicit about this "dirty laundry" but the proposed rule does cite several public comments to the ANPRM that expose deviations in RIAs from what seems to

be expected in the agency's guidelines and OMB Circular A4. Why doesn't the agency explicitly say that numerous RIAs prepared in the past do not adhere to agency and OMB guidelines? I am not sure but if I were EPA General Counsel, I would not urge public disclosure of analytic weaknesses in previous RIAs. From a scientific perspective, we might urge the agency to be more explicit about the analytic weaknesses of previous RIAs, if that is the problem the agency seeks to fix.

7. Why might it be controversial for EPA to legally bind itself to the agency's and OMB's CBA guidelines? After all, the proposed rule is applicable to both acts of deregulation and acts of regulation. Several aspects of the proposal are controversial. First, some do not have confidence in the federal courts to resolve disputes about whether an RIA is or is not compliant with applicable guidelines. Second, some believe that cost-benefit thinking already has too much influence in clean air rule makings and this proposal will only give the "bean counter" mentality more power at the agency. Finally, program offices may fear that they will have to devote more of their scarce resources to elaborate CBAs rather than use those resources to develop more rulemakings or develop stronger engineering and scientific information to support rulemakings.

Much of what I have said may be obvious to some or all of you, and feel free to provide different perspectives on the context that I have provided.

Additional issues for SAB.

1. Insofar as the claims of co-benefit are a major concern of the agency, I think the rule should offer explicit direction on how the technical quality of co-benefit assessments can be improved. Regardless of whether co-benefits are legally permissible or Impermissible in agency decision making, Congress and the public should be informed about co-benefits with high quality analysis. We can play a constructive role by explaining how those Co-benefit analyses can be improved.
2. Best practices of CBA evolve over time based on new understanding of issues, refined theories, and improved methods. We might offer advice as to how the rule should be crafted to accommodate advances in CBA.
3. Behavioral economics is playing an increasing role in EPA RIAs, especially RIAs from the air office. We might consider some general guidance — less detailed than we are developing for the agency guidelines — for the proposed rule. I would favor language that embraces the legitimacy of behavioral economics while pointing to the need for rigorous quality standards.
4. Uncertainty analysis of air quality benefits below the NAAQS remains a technical challenge for the agency. Our panel has the expertise to make constructive suggestions in this area.

Dr. Richard Smith

I support the decision that SAB should review this proposed rulemaking, for the following two main reasons:

1. This is only the second occasion, during my tenure on the SAB, that we have considered a proposed rulemaking that is about EPA's scientific processes, rather than a change in the regulation for some specific pollutant. The first was, of course, the earlier "transparency rule" that attracted such wide comment (and that has already been the subject of SAB review). To clarify a point that initially confused me, this is not a revision or replacement of that rule, but an entirely new rule; however, it seems to me to at least potentially raise some similar issues, and therefore merits full SAB review.
2. While much of the rule appears benign, even proposing things that most of us would probably agree are sound criteria, the EPA has not adequately explained how the rule would be applied in practice, or why it was necessary at all. This naturally raises a concern that the rule might be applied in ways that are not transparent from its wording. For example, it's hard to disagree with the statement that an epidemiological study "must assess the influence of confounders" (FR, top of page 35621) but could it result in studies being excluded that any reasonable epidemiologist would say are perfectly sound? That's the problem with trying to codify what should properly be scientific judgment as federal law. I would like to convene a public meeting where we could hear the opinions of public commentators, as well as having a full SAB discussion, before formulating my own view on this kind of provision.

In the following, I list specific concerns that I feel the SAB ought to discuss. One point I would like to clarify at the beginning is that by including a "concern" in this list, I do not mean to imply that I am personally opposed to the point at issue: quite a few of them I have included because they are (I think) new to the EPA, and I feel we should have a full discussion (including allowing opportunity for public comment) before we finalize our view.

All references labelled "FR" are to the Federal Register publication that was circulated to SAB members (EPA-HQ-OAR-2020-0044-0001.pdf). Also, most of my comments refer directly to the proposed rule (beginning "PART 83" – second column of FR, page 35625), though where the concern I have is only in the preamble and not part of the rule itself, I have highlighted that.

1. The document nowhere discusses the means of assessing the monetary value of human life, though many of the most critical endpoints from epidemiological studies are deaths (either all non-accidental deaths, or specific causes such as cardiovascular, respiratory, etc.). This is commonly referred to as the "value of statistical life" (VSL). It's possible that phrases like "values that individuals place on the change in benefit endpoints..." (83.3(a)(7)) or "Monetize all benefits by following well-defined economic principles..." (83.3(a)(8)(ii)) are referring indirectly to this, but that point is not self-evident to me. [When I raised this issue at the meeting with EPA, there was a response that the "Guidelines" document (FR, page 31615 and footnote 12) discussed this issue. If that

already covers the concerns I have, maybe we don't need a discussion of the full SAB – I'm not familiar with the Guidelines but will try to make myself so before our meeting.]

2. It looks like the requirement to analyze at least three different versions of a proposed new rule (FR, 83.1(1)-(3) and 83.3(a)(3)) is new to the Agency. This seems a reasonable way to ensure that some alternative possible rules are analyzed before the Agency opts for any one rule, but how burdensome would this be, and would it effectively delay the introduction of new rules? [If even one version of a new rule shows very clear net benefits, and if there is a timeliness issue, an argument could be made that the Agency should just introduce that rule without unnecessary delay.]
3. The proposed rule is vague about exactly what would be required in the way of a causal analysis: the only place this is discussed (in the rule itself, not the preamble) is 83.3(a)(7)(i). It seems to me that the agency should at least be encouraged, and perhaps required, to conduct a more formal causal analysis before proceeding with a proposed new rule, though given that causal analysis is still a rapidly developing field, I would not want to be too prescriptive about the form that should take.
4. Part 83.3(a)(9)(iii)(B) states "The pollutant analyzed in the study matches the pollutant of interest in the regulation." This appears to me to be an attempt to rule out of bounds any discussion based on "co-pollutants", a question that arose recently in connection with EPA's mercury rule, where it was claimed there was a substantial "co-pollutant" benefit of reduced PM_{2.5}. I am aware that this is a controversial issue and one that may yet be decided in federal court, but I think SAB should at least discuss its implications.
5. Part 83.3(a)(9)(iii)(D) states "the study location must be appropriately matched to the analysis" and "the study population characteristics must be sufficiently similar to those of the analysis." As with several other of these points I'm raising, those are not inherently unreasonable objectives, but what do they mean? Could it mean, for example, that a study conducted primarily in Canada would be ruled out of order for a rule intended for the USA? This is one of numerous places where I question whether a statement like this needs to be written into an EPA rulemaking rather than left to the judgment of the scientists making the assessment.
6. Part 83.3(a)(9)(vii)(A) through (G): I'd like us to discuss each of these seven provisions to make sure we are all on the same page here. On the face of it, all of these are reasonable steps that one would expect the Agency to cover, but I raise the same questions again about why they are being written into an Agency rulemaking and whether they impose an undue burden on Agency scientists.
7. A more specific query about 83.3(a)(9)(vii)(G): What does the phrase "age of the air quality data" mean? Could it be interpreted to mean that a study started in the 1980s would not qualify?
8. Part 83.3(a)(12): this section seems to overlap the earlier "transparency rule" but it would be helpful to clarify where the two rules are the same and where they are different. I have a specific question whether they would exclude the Agency using the Harvard Six Cities and American Cancer Society datasets, since the owners of both datasets have repeatedly refused to make them public but, as far as I am aware, are not prohibited by law from doing so.

9. The “Retrospective Analysis” section on FR, page 35624, says “EPA requests comment on whether EPA should include a requirement for conducting retrospective analysis of significant CAA rulemaking”. I find the wording of this rather sinister. There may be individual cases where a CAA rulemaking introduced many years ago seems out of date, where there is reason to think that changes in technology (that could affect costs), or significant new health analyses (affecting benefits), render the original BCA obsolete: in such circumstances, it is reasonable that EPA should repeat the BCA to determine whether the rule is still appropriate. But to make this a “requirement” that would apply to all rulemakings judged “significant” seems excessively burdensome to me, and to raise all sorts of issues about unintended consequences. It seems to me we should look at this issue carefully.

Finally, I should comment that the initial workgroup review also asked us to identify any parts of the proposed rule that do not require SAB review. It seems to me (concurring with other members of the workgroup) that section 83.4, that focuses largely on presentational issues, is largely uncontroversial and does not require further review.

Overarching comments:

- It is not clear why this rule is needed given that the Agency has much more detailed and more thoroughly-reviewed BCA guidance available, and that following that guidance is already within the purview of the administrator.
- However, if the rule is to go forward, the overarching need for SAB review is to ensure that the specific requirements it imposes are consistent with the best practices incorporated into the Agency's guidelines (currently under SAB review) and in OMB guidance. The rule should not mandate any analytical procedures that are at odds with those documents.

Detailed comments:

- Section 83.3(a)(2) on the statement of need. Does this section serve any scientific purpose since the agency is often required to act by statute?
- Section 83.3(a)(4) on the nature of the baseline. This section should be reviewed to ensure consistency with best practices and existing guidelines.
- Section 83.3(a)(7) on estimating benefits. Review to ensure this is consistent with best practices and existing guidelines (both economics and quantifying health impacts).
- Section 83.3(a)(9) on health endpoints. Review to ensure this is consistent with best practices and Agency guidelines in assessing health impacts. This section is detailed and highly prescriptive and thus a high priority for SAB review.
- Section 83.3(a)(10) on characterizing uncertainty. This section is also highly prescriptive and should be reviewed to ensure that it is consistent with best practices and the Agency's guidelines.
- Section 83.3(a)(12) on public data. This should be reviewed to ensure it is consistent with best practices and existing guidance, as well as with the SAB's prior advice on transparency.

Areas for review

Codified Section

Subpart A §83.1 (2) and (3) -

“Regulatory options means, at a minimum...” options that “accomplish(es) the stated objectives...” This is confusing. If any options, apt a minimum achieves a state legislative objective, that the option is a cost-effective option, not a cost-beneficial option. This would be clearer if they had stated, the benefits are expected to achieve some portion of the legislative objective. “Achieves” makes it sound as if, for example, the different options eliminate PM 2.5.

Subpart A §83.1 (9) (iii), (iv)(v) (vi) and (vii) –

The Bush administrations OIRA instituted a similar exercise in its 2006 draft Risk Assessment Bulletin which it was forced to recall in January, 2007. A National Research Council of the National Academy of Sciences rejected it saying it was too flawed to be repairable.¹ The council apparently began the exercise already thinking that there would need to be extensive modifications.² They objected to every single line.

For example, they rejected central estimates because of potential variability where “children, the elderly, people with illnesses (such as respiratory or cardiac) disease, the developing fetus or workers” might not be protected.” They suggested that, “A central estimate and a risk range might be misleading in situations when sensitive populations are of primary concern.”³

However, it is important to note that, “The committee also agrees that OMB should encourage the federal agencies to describe, develop, and coordinate their own technical risk assessment guidance.⁴ In fact, EPA began this effort in 2004.⁵ In its testimony on the OIRA bulletin, EPA stated, “For criteria air pollutants, OAQPS has conducted probabilistic exposure analyses and for some air pollutants (e.g., particulate matter, ozone) and health endpoints it has conducted probabilistic risk assessments incorporating statistical uncertainty in exposure-response and concentration-response relationships.”⁶ They also noted that “Confidence in ensuring that risk is not underestimated has often been qualitatively ensured through the use of default assumptions.”⁷

¹ NRC, “Scientific Review of the Proposed Risk Assessment Bulletin from the Office of Management and Budget (2007).

² Shipiro, Sidney A., “OMB and the Politicization of Risk Assessment, Environmental Law, 37(4). [HYPERLINK "http://elawreview.org/articles/volume-37/issue-37-4/omb-and-the-politicization-of-risk-assessment/"]

³ NRC, p. 4.

⁴ NRC, p. 7.

⁵ EPA Staff Paper, “An Examination of EPA Risk Assessment Principles and Practices” 2004.

⁶ NRC, p. 254.

⁷ NRC., p. 255.

This effort could be considered part of that charge.

The NAS committee, despite being composed of risk analysis experts, appeared to confuse the use of risk assessment done in part to satisfy the necessary economic standards for a benefits assessment with policy decisions. No benefit-cost analysis could then, now, or with this intended regulation, prevent policy makers from protecting highly exposed or highly sensitive subpopulations. An RIA can focus on the “average person” but also provide separate benefit estimates for subpopulation benefits.

To say that providing both different estimates of the general population and at-risk populations will be “misleading” or “confusing” to risk policy makers suggests that there is a need to carefully explain the results, not withhold helpful information.

Review of this section could help to clarify the purpose of this proposal.

Message

From: Armitage, Thomas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=06E0B9190F534CF0B6E34DA284081A14-ARMITAGE, TOM]
Sent: 6/12/2020 10:07:12 PM
To: Graham, John D. [grahamjd@indiana.edu]
Subject: New EPA proposed rule

Dear John,

In accordance with the new process for SAB review of proposed regulatory actions, the SAB Office will soon be scheduling a non-public teleconference for the SAB chair to receive a briefing on the proposed EPA rule identified below. Dr. Honeycutt would like to invite you to attend this teleconference in order to provide advice on whether the proposed rule merits SAB review. Please send me a reply to indicate whether you would be willing to participate in the teleconference. I will provide information about the day and time of the teleconference when it is available.

At the teleconference, EPA staff will present a briefing on the proposed rule titled: "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process." This proposed rule is available on the EPA website at the following URL:

https://www.epa.gov/sites/production/files/2020-06/documents/consistent_transparent_bca_fr_notice_final_pre-pub_0.pdf

As indicated in the EPA document, "Science Advisory Board Engagement Process for Review of Regulatory Actions," the goals of the upcoming non-public teleconference are to (a) provide an interactive briefing for the SAB Chair on the proposed regulatory action; (b) discuss any potential EPA plan for consulting with other advisory committee(s); (c) discuss whether the proposed regulatory action merits SAB review; and (d) for those proposed regulatory actions that may merit SAB review, identify specific scientific topics within the rule, a timeline for the review, and whether it is best reviewed by the full SAB, a standing committee, or an ad hoc committee.

I look forward to receiving your reply,

Regards,

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

Message

From: Armitage, Thomas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=06E0B9190F534CF0B6E34DA284081A14-ARMITAGE, TOM]
Sent: 7/14/2020 5:42:45 PM
To: DOERING, OTTO [doering@purdue.edu]; Cox, Tony [tcoxdenver@aol.com]; Smith, Richard L [rls@email.unc.edu]; Peter Wilcoxon [wilcoxon@maxwell.syr.edu]; Graham, John D. [grahamjd@indiana.edu]; Richard Williams [rwilliav123@gmail.com]; jrturner@wustl.edu; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: Brennan, Thomas [Brennan.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Stallworth, Holly [Stallworth.Holly@epa.gov]
Subject: Follow-up assignments and action items from the July 10th teleconference on EPA's proposed Benefit-Cost rule
Attachments: EPA-HQ-OAR-2020-0044-0001.pdf

All,

Thank you for participating in the teleconference on Friday, July 10 to discuss whether the SAB should review EPA's proposed rule titled "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process." This note summarizes the follow-up assignments and action items from the teleconference.

1. The SAB will review the scientific and technical basis of EPA's proposed rule. The SAB Office will schedule two teleconferences of the Board in August and September to conduct the review. EPA intends to finalize the rule in November, so the timeframe for completion of the SAB report should be the end of September. On the first SAB teleconference, Board members will receive a briefing on the proposed rule and discuss specific topics to be addressed in the review. Following the first teleconference, a workgroup of SAB members will develop a draft report on the proposed rule. The workgroup report will be discussed by the full SAB on the second teleconference.
2. The SAB members who were invited to participate in the July 10th teleconference will serve on the SAB workgroup that will develop the draft SAB report on the proposed rule.
3. To prepare for the first teleconference of the full SAB, all workgroup members are asked to develop a list of specific scientific topics, or proposed rule requirements, that should be considered in the SAB review. Workgroup members are also asked to provide a brief explanation of why each topic or proposed rule requirement should be considered in the SAB review. A list of the topics identified by workgroup members will be provided to the Board to help focus the discussion on the first teleconference. **Please submit your list of topics to be considered to Tom Armitage by Wednesday, July 22nd.**

A PDF file containing the proposed rule is attached (see attached file EPA-HQ-OAR-2020-0044-0001). The preamble of the rule is on pages 35612 – 35625. The preamble provides background information and explains the proposed rule. The actual regulatory text of the proposed rule is on pages 35625 – 35627.

Thanks very much,

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

Message

From: Armitage, Thomas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=06E0B9190F534CF0B6E34DA284081A14-ARMITAGE, TOM]
Sent: 7/9/2020 5:50:51 PM
To: DOERING, OTTO [doering@purdue.edu]; Cox, Tony [tcoxdenver@aol.com]; Smith, Richard L [rls@email.unc.edu]; Peter Wilcoxon [wilcoxon@maxwell.syr.edu]; Richard Williams [rwilliav123@gmail.com]; jrturner@wustl.edu; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: Brennan, Thomas [Brennan.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Stallworth, Holly [Stallworth.Holly@epa.gov]
Subject: Reminder and additional material for the July 10th teleconference to discuss SAB review of EPA's proposed benefit-cost rule
Attachments: Agenda for SAB Reg Review Briefing teleconference_07_10_20.pdf; BC NPRM_1 pager overview for SAB_OAR.pdf

All,

This is a reminder that we will be holding a teleconference tomorrow, **Friday, July 10th from 1:00 – 3:00 p.m. (Eastern Time)** to discuss whether the SAB should review EPA's proposed rule titled "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process." Attached please find an overview of the proposed rule provided by the Office of Air and Radiation for the teleconference. I have also attached the teleconference agenda.

To join the teleconference, please call the following conference number **1-866-299-3188** and enter the conference code **2023439995#** at the prompt.

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

Overview of EPA's June 2019 NPRM, Increasing Consistency and Transparency in the Consideration of Benefits and Costs in the Rulemaking Process (i.e., "Benefit-Cost" rule) (RIN 2060-AU51)

Summary: This action proposes to require a high-quality BCA, along with additional presentational requirements for results (especially benefits), for all significant CAA regulations.

Background:

- Response to E.O. 13777: In April 2017, EPA opened a docket to solicit feedback and identify regulations that "impose costs that exceed benefits". The Agency received comments about its consideration of costs and benefits. Per the E.O. and based on these public comments, EPA decided to take further action to evaluate opportunities for reform.
- June 2018 ANPRM: EPA requested comment on: (a) the nature of any consistency/transparency problems, (b) recommendations on approaches for addressing these problems, and (c) whether to achieve improvements through rulemakings or other means.
 - Received >3,200 comment letters; 142 included substantive comments pertaining to how EPA *quantifies* benefits and costs and/or how EPA *weighs* benefits or costs in decisions.
- May 2019 Administrator's Memo:
 - Directed OAR, OW, OCSPP, and OLEM to develop Tier 1 statute-specific rulemakings that outline how consistency, transparency concepts will be implemented in future rules, starting with OAR.
 - Outlined 4 principles for developing these rulemakings: (1) ensuring the Agency balances benefits and costs in regulatory decision-making; (2) increasing consistency in the interpretation of statutory terminology; (3) providing transparency in the weight assigned to various factors in regulatory decisions; and, (4) promoting adherence to best practices in conducting the technical analysis used to inform decisions.
- Status of statute-specific rulemakings:
 - OAR's NPRM was signed on June 4 and published in the Federal Register on June 11. A virtual public hearing was held on July 1. The 45-day comment period closes August 3. It is expected to be finalized in November 2020.
 - Other program offices are starting analogous rulemakings as reflected in EPA's Regulatory Agenda.

OAR's Proposed Requirements:

1. Preparation of a BCA for all significant CAA proposed and final regulations
 - Defines significant regulation as: *"a proposed or final regulation that is determined to be a 'significant regulatory action' pursuant to E.O. 12866 or is otherwise designated as significant by the Administrator"*.
2. Adherence to best practices for development of BCA
 - Proposes best practices consistent with EPA's *Guidelines for Preparing Economic Analyses* and *OMB Circular A-4*, and also proposes that risk assessments to support BCAs should follow best methodological practices for risk characterization/assessment.
 - Regulatory text includes high-level elements of *Guidelines* and *Circular A-4*, requiring explanations throughout for analytic choices made.
 - Includes discussion of existing guidance documents to support that the proposed requirements are best practices but avoids referencing them by name within the regulatory text. This is

purposeful to avoid confusion or need to revise this procedural rule following periodic updates of guidance documents.

- Also includes additional requirements related to criteria for including/quantifying changes in health endpoints in a BCA.

3. Presentational Requirements of BCA Results in Preamble

- Proposes to require:
 - i. A summary presentation of the overall BCA results for the rule, including total costs, benefits, and net benefits;
 - ii. An additional reporting of the public health and welfare benefits that pertain to the specific objective of the CAA provision under which the rule is promulgated;
 - iii. An additional requirement to also provide a disaggregation of cost categories to the extent possible.
- Proposes that these presentational requirements all appear in the same section of the preamble.

4. Additional requests for comment.

Coordination with Forthcoming Update of EPA's *Guidelines for Preparing Economic Analyses*:

- EPA is in the process of a periodic update to the *Guidelines for Preparing Economic Analyses*
 - Building on earlier guidance issued in 1983, EPA issued the first edition of the *Guidelines* in 2000; last comprehensive revision in 2010.
 - EPA's *Guidelines* complement OMB *Circular A-4* by providing greater detail and coverage of analytic challenges faced by EPA analysts.
- The revisions in the current update of the *Guidelines* have gone through internal review and are now under review by the SAB.
- The *Guidelines* provide greater detail than the Benefit-Cost NPRM, but the proposed requirements in the NPRM pertaining to conducting BCA are consistent with the current iteration of the *Guidelines* (previously reviewed by the SAB) and the draft update under SAB review.
- EPA will ensure that this consistency is maintained as both the *Guidelines* update and the Benefit-Cost rule are finalized.

From: Graham, John D. [grahamjd@indiana.edu]
Sent: 6/12/2020 11:06:32 PM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]
Subject: Re: [External] New EPA proposed rule
Attachments: smime.p7s

Tom. I am happy to join the call. John

Sent from my iPhone

On Jun 12, 2020, at 3:07 PM, Armitage, Thomas <Armitage.Thomas@epa.gov> wrote:

This message was sent from a non-IU address. Please exercise caution when clicking links or opening attachments from external sources.

Dear John,

In accordance with the new process for SAB review of proposed regulatory actions, the SAB Office will soon be scheduling a non-public teleconference for the SAB chair to receive a briefing on the proposed EPA rule identified below. Dr. Honeycutt would like to invite you to attend this teleconference in order to provide advice on whether the proposed rule merits SAB review. Please send me a reply to indicate whether you would be willing to participate in the teleconference. I will provide information about the day and time of the teleconference when it is available.

At the teleconference, EPA staff will present a briefing on the proposed rule titled: "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process." This proposed rule is available on the EPA website at the following URL:

https://www.epa.gov/sites/production/files/2020-06/documents/consistent_transparent_bca_fr_notice_final_pre-pub_0.pdf

As indicated in the EPA document, "Science Advisory Board Engagement Process for Review of Regulatory Actions," the goals of the upcoming non-public teleconference are to (a) provide an interactive briefing for the SAB Chair on the proposed regulatory action; (b) discuss any potential EPA plan for consulting with other advisory committee(s); (c) discuss whether the proposed regulatory action merits SAB review; and (d) for those proposed regulatory actions that may merit SAB review, identify specific scientific topics within the rule, a timeline for the review, and whether it is best reviewed by the full SAB, a standing committee, or an ad hoc committee.

I look forward to receiving your reply,

Regards,

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office

202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

Message (Digitally Signed)

From: Graham, John D. [grahamjd@indiana.edu]
Sent: 6/26/2020 3:08:32 PM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]
CC: DOERING, OTTO [doering@purdue.edu]; Cox, Tony [tcoxdenver@aol.com]; Smith, Richard L [rls@email.unc.edu]; jrturner@wustl.edu; Peter Wilcoxon [wilcoxon@maxwell.syr.edu]; Richard Williams [rwilliav123@gmail.com]
Subject: Re: [External] Please send information about your availability on July 9th and 10th for a teleconference
Attachments: smime.p7s

Tom. Alas I am out of pocket both July 9 and 10. The joys of summer. You can proceed without me. I think it is obvious that parts of this proposal require SAB review but we need to move more promptly than usual to be relevant. John

Sent from my iPhone

On Jun 25, 2020, at 2:00 PM, Armitage, Thomas <Armitage.Thomas@epa.gov> wrote:

This message was sent from a non-IU address. Please exercise caution when clicking links or opening attachments from external sources.

All

Thank you for your willingness to participate in a teleconference with Dr. Honeycutt to discuss whether the proposed EPA rule, "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process" merits SAB review. We would like to schedule a two-hour teleconference for you to receive a briefing on the proposed rule and discuss whether it should be reviewed by the SAB. Please send me a reply indicating your availability between 12:00 noon and 5:00 p.m. (Eastern Time) on the following days for the teleconference.

July 9

July 10

Thanks very much,

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

From: Graham, John D. [grahamjd@indiana.edu]
Sent: 7/21/2020 3:19:21 AM
To: Peter Wilcoxon [wilcoxon@maxwell.syr.edu]
CC: Armitage, Thomas [Armitage.Thomas@epa.gov]; DOERING, OTTO [doering@purdue.edu]; Cox, Tony [tcoxdenver@aol.com]; Smith, Richard L [rls@email.unc.edu]; Richard Williams [rwilliav123@gmail.com]; jrturner@wustl.edu; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]; Brennan, Thomas [Brennan.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Stallworth, Holly [Stallworth.Holly@epa.gov]
Subject: Re: [External] Re: Follow-up assignments and action items from the July 10th teleconference on EPA's proposed Benefit-Cost rule
Attachments: smime.p7s

Peter et al.

I am in general agreement with the issues that others have raised as appropriate for SAB review. Based on my OMB-OIRA experience, I want to offer some context as to why a rule like this might be seen by some as necessary and appropriate, and why it is also likely to be controversial in the eyes of others. I conclude with some additional issues that SAB might address, since much of the context below are policy and legal themes.

I wholeheartedly agree with Peter that we should look carefully at whether each prescription in the proposed rule is consistent with best-practice CBA.

1. As several noted, EPA already has agency-wide guidelines for economic analysis (now under revision and SAB review). However, those guidelines are merely technical suggestions and are not legally binding on the agency. If a program office and the Administrator are willing to ignore them (and if OMB is not diligent and influential enough to force compliance with them), then a Clean air rulemaking may be issued with an RIA that does not adhere to the agency's or OMB guidelines.

2. As I read the proposed rule, it's underlying purpose is to legally bind the agency to the EPA and OMB CBA guidelines except of course where a statute does not permit CBA or forces adoption of a specific rule. Even in those cases, the proposed rule requires the agency to produce a best-practice CBA so that Congress and stakeholders are informed of costs and benefits.

3. The role of judicial review arises via the APA, which authorizes federal judicial Review of agency rules according to certain principles. This CBA initiative is an agency rule.

4. In my experience with EPA, the commitment to best-practice CBA varies among the program offices and over time depending on the presidential administration and the political personalities and career staff leaders at EPA and OMB and other agencies.

5. The EPA economic guidelines are generated primarily by the policy arm of EPA, where most of the Agency's economists are housed and where there are strong collaborative links to academics and think tank researchers with expertise in CBA. The program offices do have some good economists but their rulemakings are strongly influenced by the disciplines of engineering, science and law and the program specialists. While the program offices participate to varying degrees in the development of the guidelines, they are not nearly as influential as the policy arm of EPA in determining the content of the guidelines. In many cases, the program offices make rulemaking decisions and then ask the economists to prepare an RIA that defend the chosen rule. Richard Morgenstern of RFF prepared a useful book of case studies illustrating this dynamic at the agency.

6. Among the program offices, I would say that the air office has perhaps the strongest commitment to good economic analysis. Nonetheless, based on reviewing numerous rulemakings from the air office, I know that the quality of the CBAs coming from the air office are of uneven quality. The proposed rule is not explicit about this "dirty laundry" but the proposed rule does cite several public comments to the ANPRM that expose deviations in RIAs from what seems to be expected in the agency's guidelines and OMB Circular A4. Why doesn't the agency explicitly say that numerous RIAs prepared in the past do not adhere to agency and OMB guidelines? I am not sure but if I were EPA General Counsel, I would not urge public disclosure of analytic weaknesses in previous RIAs. From a scientific perspective, we might urge the agency to be more explicit about the analytic weaknesses of previous RIAs, if that is the problem the agency seeks to fix.

7. Why might it be controversial for EPA to legally bind itself to the agency's and OMB's CBA guidelines? After all, the proposed rule is applicable to both acts of deregulation and acts of regulation. Several aspects of the proposal are controversial. First, some do not have confidence in the federal courts to resolve disputes about whether an RIA is or is not compliant with applicable guidelines. Second, some believe that cost-benefit thinking already has too much influence in clean air rule makings and this

proposal will only give the “bean counter” mentality more power at the agency. Finally, program offices may fear that they will have to devote more of their scarce resources to elaborate CBAs rather than use those resources to develop more rulemakings or develop stronger engineering and scientific information to support rulemakings.

Much of what I have said may be obvious to some or all of you, and feel free to provide different perspectives on the context that I have provided.

Additional issues for SAB.

1. Insofar as the claims of co-benefit are a major concern of the agency, I think the rule should offer explicit direction on how the technical quality of co-benefit assessments can be improved. Regardless of whether co-benefits are legally permissible or Impermissible in agency decision making, Congress and the public should be informed about co-benefits with high quality analysis. We can play a constructive role by explaining how those Co-benefit analyses can be improved.

2. Best practices of CBA evolve over time based on new understanding of issues, refined theories, and improved methods. We might offer advice as to how the rule should be crafted to accommodate advances in CBA.

3. Behavioral economics is playing an increasing role in EPA RIAs, especially RIAs from the air office. We might consider some general guidance — less detailed than we are developing for the agency guidelines — for the proposed rule. I would favor language that embraces the legitimacy of behavioral economics while pointing to the need for rigorous quality standards.

4. Uncertainty analysis of air quality benefits below the NAAQS remains a technical challenge for the agency. Our panel has the expertise to make constructive suggestions in this area.

I hope these thoughts are helpful.

John

Sent from my iPhone

> On Jul 20, 2020, at 5:18 PM, Peter Wilcoxon <wilcoxon@maxwell.syr.edu> wrote:

>

> This message was sent from a non-IU address. Please exercise caution when clicking links or opening attachments from external sources.

> -----

>

> Hi Tom,

>

> Here are my suggestions on sections of the rule meriting review.

>

> Thanks,

> Pete

> <wilcoxon-topics.docx>

Message

From: Peter Wilcoxon [wilcoxon@maxwell.syr.edu]
Sent: 7/20/2020 9:18:33 PM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]; DOERING, OTTO [doering@purdue.edu]; Cox, Tony [tcoxdenver@aol.com]; Smith, Richard L [rls@email.unc.edu]; Graham, John D. [grahamjd@indiana.edu]; Richard Williams [rwilliav123@gmail.com]; jrtturner@wustl.edu; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: Brennan, Thomas [Brennan.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Stallworth, Holly [Stallworth.Holly@epa.gov]
Subject: Re: Follow-up assignments and action items from the July 10th teleconference on EPA's proposed Benefit-Cost rule
Attachments: wilcoxon-topics.docx

Hi Tom,

Here are my suggestions on sections of the rule meriting review.

Thanks,
Pete

Topics to be Considered for SAB Review Regarding Proposed Rule:
“Increasing Consistency and Transparency in Considering Benefits and Costs
in Clean Air Act Rulemaking Process”

Overarching comments:

- It is not clear why this rule is needed given that the Agency has much more detailed and more thoroughly-reviewed BCA guidance available, and that following that guidance is already within the purview of the administrator.
- However, if the rule is to go forward, the overarching need for SAB review is to ensure that the specific requirements it imposes are consistent with the best practices incorporated into the Agency’s guidelines (currently under SAB review) and in OMB guidance. The rule should not mandate any analytical procedures that are at odds with those documents.

Detailed comments:

- Section 83.3(a)(2) on the statement of need. Does this section serve any scientific purpose since the agency is often required to act by statute?
- Section 83.3(a)(4) on the nature of the baseline. This section should be reviewed to ensure consistency with best practices and existing guidelines.
- Section 83.3(a)(7) on estimating benefits. Review to ensure this is consistent with best practices and existing guidelines (both economics and quantifying health impacts).
- Section 83.3(a)(9) on health endpoints. Review to ensure this is consistent with best practices and Agency guidelines in assessing health impacts. This section is detailed and highly prescriptive and thus a high priority for SAB review.
- Section 83.3(a)(10) on characterizing uncertainty. This section is also highly prescriptive and should be reviewed to ensure that it is consistent with best practices and the Agency’s guidelines.
- Section 83.3(a)(12) on public data. This should be reviewed to ensure it is consistent with best practices and existing guidance, as well as with the SAB’s prior advice on transparency.

Message (Digitally Signed)

From: Graham, John D. [grahamjd@indiana.edu]
Sent: 7/20/2020 8:20:35 PM
To: tcoxdenver@aol.com
CC: rwilliav123@gmail.com; Armitage, Thomas [Armitage.Thomas@epa.gov]; doering@purdue.edu; rls@email.unc.edu; wilcoxen@maxwell.syr.edu; jrturner@wustl.edu; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]; Brennan, Thomas [Brennan.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Stallworth, Holly [Stallworth.Holly@epa.gov]
Subject: Re: [External] Re: Follow-up assignments and action items from the July 10th teleconference on EPA's proposed Benefit-Cost rule
Attachments: smime.p7s

No idea because I don't know most of these Trumpers and most are physical/life scientists. A subgroup of economists has been designated to prepare the SAB review. We would never speak to the policy or legal questions that interest you. Not our purview.

I just finished reading the first half the proposal. The objective of the rule appears to be to ensure that clean air rulemakings are consistent with best practices CBA as defined by agency guidelines and Circular A-4. However, the proposal never provides any examples of agency rulemakings that were out of compliance. The preamble does cite some public comments where people complained about previous rules.

Sent from my iPhone

On Jul 20, 2020, at 1:35 PM, "tcoxdenver@aol.com" <tcoxdenver@aol.com> wrote:

This message was sent from a non-IU address. Please exercise caution when clicking links or opening attachments from external sources.

Dear Tom and team,

My suggested topics are attached.

Best,

-- Tony

-----Original Message-----

From: Richard Williams <rwilliav123@gmail.com>
To: Armitage, Thomas <Armitage.Thomas@epa.gov>
Cc: DOERING, OTTO <doering@purdue.edu>; Cox, Tony <tcoxdenver@aol.com>; Smith, Richard L <rls@email.unc.edu>; Peter Wilcoxen <wilcoxen@maxwell.syr.edu>; Graham, John D. <grahamjd@indiana.edu>; jrturner@wustl.edu <jrturner@wustl.edu>; Michael Honeycutt <Michael.honeycutt@tceq.texas.gov>; Brennan, Thomas <Brennan.Thomas@epa.gov>; Johnston, Khanna <Johnston.Khanna@epa.gov>; Stallworth, Holly <Stallworth.Holly@epa.gov>
Sent: Mon, Jul 20, 2020 9:46 am
Subject: Re: Follow-up assignments and action items from the July 10th teleconference on EPA's proposed Benefit-Cost rule

Tom,

Attached are my suggestions for review. Sorry, I went on for more than a sentence or two.

Richard

On Tue, Jul 14, 2020 at 1:42 PM Armitage, Thomas <Armitage.Thomas@epa.gov> wrote:
All,

Thank you for participating in the teleconference on Friday, July 10 to discuss whether the SAB should review EPA's proposed rule titled "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process." This note summarizes the follow-up assignments and action items from the teleconference.

1. The SAB will review the scientific and technical basis of EPA's proposed rule. The SAB Office will schedule two teleconferences of the Board in August and September to conduct the review. EPA intends to finalize the rule in November, so the timeframe for completion of the SAB report should be the end of September. On the first SAB teleconference, Board members will receive a briefing on the proposed rule and discuss specific topics to be addressed in the review. Following the first teleconference, a workgroup of SAB members will develop a draft report on the proposed rule. The workgroup report will be discussed by the full SAB on the second teleconference.
2. The SAB members who were invited to participate in the July 10th teleconference will serve on the SAB workgroup that will develop the draft SAB report on the proposed rule.
3. To prepare for the first teleconference of the full SAB, all workgroup members are asked to develop a list of specific scientific topics, or proposed rule requirements, that should be considered in the SAB review. Workgroup members are also asked to provide a brief explanation of why each topic or proposed rule requirement should be considered in the SAB review. A list of the topics identified by workgroup members will be provided to the Board to help focus the discussion on the first teleconference. **Please submit your list of topics to be considered to Tom Armitage by Wednesday, July 22nd.**

A PDF file containing the proposed rule is attached (see attached file EPA-HQ-OAR-2020-0044-0001). The preamble of the rule is on pages 35612 – 35625. The preamble provides background information and explains the proposed rule. The actual regulatory text of the proposed rule is on pages 35625 – 35627.

Thanks very much,

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

--

Richard Williams
703 232 4916
www.linkedin.com/in/richardawilliams123
richardawilliams.com

<Cox proposed topics for Consistency and transparency 7-20-20.docx>

Message

From: DOERING, OTTO [doering@purdue.edu]
Sent: 7/20/2020 3:05:44 PM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]; Cox, Tony [tcoxdenver@aol.com]; Smith, Richard L [rls@email.unc.edu]; Peter Wilcoxon [wilcoxon@maxwell.syr.edu]; Graham, John D. [grahamjd@indiana.edu]; Richard Williams [rwilliav123@gmail.com]; jrturner@wustl.edu; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: Brennan, Thomas [Brennan.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Stallworth, Holly [Stallworth.Holly@epa.gov]
Subject: Topics/requirements to be considered for a potential SAB review of EPA's proposed CAA benefit cost rule

Dear Tom,

Below are my thoughts on this.

1. First, I would raise again the same question as Peter Wilcoxon and Richard Smith as to whether this rule is really necessary.
2. How does this rule specific to the Clean Air Act relate to the earlier transparency rule? Are they consistent?
3. Much of the proposed rule is on health aspects (like concentration) and risk and uncertainty. Following Richard's comment, it is difficult to ascertain how the rule might be applied. If the rule were applied stringently in these areas, it might represent a substantial and possibly paralyzing burden on the agency to meet the standards. Any extreme specificity of this rule could also become an effective lever for objections to a new proposed regulation.
4. I am concerned about the possibility of EPA having standards for Benefit Cost analysis that are different from the accepted standards of other agencies. To what extent does this proposed rule depart from OMB Circular A-4? There needs to be consistency and transparency across agencies.
5. I am concerned about the possible meaning of section 83.3(a)(7) that "during the estimation of benefits, the Agency must link regulatory requirements to the value that individuals place on the change in benefit endpoints that can be meaningfully attributed to those requirements." Can the term 'meaningfully' rule out ancillary benefits? This concern is in addition to and builds on Richard's concern with part 83.3(a)(9)(iii)(B) of the rule.
6. I also believe that a requirement for retrospective analysis could be burdensome and raises issues about unintended consequences.
7. I would follow Richard's judgment that section 83.4 does not require further review.

Otto Doering

Message

From: Smith, Richard L [rls@email.unc.edu]
Sent: 7/15/2020 11:43:15 PM
To: Armitage, Thomas [Armitage.Thomas@epa.gov]; DOERING, OTTO [doering@purdue.edu]; Cox, Tony [tcoxdenver@aol.com]; Peter Wilcoxon [wilcoxon@maxwell.syr.edu]; Graham, John D. [grahamjd@indiana.edu]; Richard Williams [rwilliav123@gmail.com]; jrturner@wustl.edu; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: Brennan, Thomas [Brennan.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Stallworth, Holly [Stallworth.Holly@epa.gov]
Subject: RE: Follow-up assignments and action items from the July 10th teleconference on EPA's proposed Benefit-Cost rule
Attachments: SAB_Review_Comments_RLS.docx

Dear Tom,

Please find attached my initial discussion of the proposed rule on Benefit-Cost Analyses.

Best regards,

Richard

From: Armitage, Thomas <Armitage.Thomas@epa.gov>
Sent: Tuesday, July 14, 2020 1:43 PM
To: DOERING, OTTO <doering@purdue.edu>; Cox, Tony <tcoxdenver@aol.com>; Smith, Richard L <rls@email.unc.edu>; Peter Wilcoxon <wilcoxon@maxwell.syr.edu>; Graham, John D. <grahamjd@indiana.edu>; Richard Williams <rwilliav123@gmail.com>; jrturner@wustl.edu; Michael Honeycutt <Michael.honeycutt@tceq.texas.gov>
Cc: Brennan, Thomas <Brennan.Thomas@epa.gov>; Johnston, Khanna <Johnston.Khanna@epa.gov>; Stallworth, Holly <Stallworth.Holly@epa.gov>
Subject: Follow-up assignments and action items from the July 10th teleconference on EPA's proposed Benefit-Cost rule

All,

Thank you for participating in the teleconference on Friday, July 10 to discuss whether the SAB should review EPA's proposed rule titled "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process." This note summarizes the follow-up assignments and action items from the teleconference.

1. The SAB will review the scientific and technical basis of EPA's proposed rule. The SAB Office will schedule two teleconferences of the Board in August and September to conduct the review. EPA intends to finalize the rule in November, so the timeframe for completion of the SAB report should be the end of September. On the first SAB teleconference, Board members will receive a briefing on the proposed rule and discuss specific topics to be addressed in the review. Following the first teleconference, a workgroup of SAB members will develop a draft report on the proposed rule. The workgroup report will be discussed by the full SAB on the second teleconference.
2. The SAB members who were invited to participate in the July 10th teleconference will serve on the SAB workgroup that will develop the draft SAB report on the proposed rule.
3. To prepare for the first teleconference of the full SAB, all workgroup members are asked to develop a list of specific scientific topics, or proposed rule requirements, that should be considered in the SAB review. Workgroup members are also asked to provide a brief explanation of why each topic or proposed rule requirement should be considered in the SAB review. A list of the topics identified by workgroup members will be provided to the Board to help focus the discussion on the first teleconference. **Please submit your list of topics to be considered to Tom Armitage by Wednesday, July 22nd.**

A PDF file containing the proposed rule is attached (see attached file EPA-HQ-OAR-2020-0044-0001). The preamble of the rule is on pages 35612 – 35625. The preamble provides background information and explains the proposed rule. The actual regulatory text of the proposed rule is on pages 35625 – 35627.

Thanks very much,

Tom Armitage

Thomas Armitage Ph.D.
Designated Federal Officer
EPA Science Advisory Board Office
202-564-2155 (phone/voice mail)
armitage.thomas@epa.gov

Comments on the SAB review of EPA's proposed rulemaking, "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process."

SAB member Richard Smith

July 15, 2020

I support the decision that SAB should review this proposed rulemaking, for the following two main reasons:

1. This is only the second occasion, during my tenure on the SAB, that we have considered a proposed rulemaking that is about EPA's scientific processes, rather than a change in the regulation for some specific pollutant. The first was, of course, the earlier "transparency rule" that attracted such wide comment (and that has already been the subject of SAB review). To clarify a point that initially confused me, this is not a revision or replacement of that rule, but an entirely new rule; however, it seems to me to at least potentially raise some similar issues, and therefore merits full SAB review.
2. While much of the rule appears benign, even proposing things that most of us would probably agree are sound criteria, the EPA has not adequately explained how the rule would be applied in practice, or why it was necessary at all. This naturally raises a concern that the rule might be applied in ways that are not transparent from its wording. For example, it's hard to disagree with the statement that an epidemiological study "must assess the influence of confounders" (FR, top of page 35621) but could it result in studies being excluded that any reasonable epidemiologist would say are perfectly sound? That's the problem with trying to codify what should properly be scientific judgment as federal law. I would like to convene a public meeting where we could hear the opinions of public commentators, as well as having a full SAB discussion, before formulating my own view on this kind of provision.

In the following, I list specific concerns that I feel the SAB ought to discuss. One point I would like to clarify at the beginning is that by including a "concern" in this list, I do not mean to imply that I am personally opposed to the point at issue: quite a few of them I have included because they are (I think) new to the EPA, and I feel we should have a full discussion (including allowing opportunity for public comment) before we finalize our view.

All references labelled "FR" are to the Federal Register publication that was circulated to SAB members (EPA-HQ-OAR-2020-0044-0001.pdf). Also, most of my comments refer directly to the proposed rule (beginning "PART 83" – second column of FR, page 35625), though where the concern I have is only in the preamble and not part of the rule itself, I have highlighted that.

1. The document nowhere discusses the means of assessing the monetary value of human life, though many of the most critical endpoints from epidemiological studies are deaths (either all non-accidental deaths, or specific causes such as cardiovascular, respiratory, etc.). This is commonly referred to as the "value of statistical life" (VSL). It's possible that phrases like "values that individuals place on the change in benefit endpoints..." (83.3(a)(7)) or "Monetize all benefits by following well-defined economic principles..." (83.3(a)(8)(ii)) are referring indirectly

to this, but that point is not self-evident to me. [When I raised this issue at the meeting with EPA, there was a response that the “Guidelines” document (FR, page 31615 and footnote 12) discussed this issue. If that already covers the concerns I have, maybe we don’t need a discussion of the full SAB – I’m not familiar with the Guidelines but will try to make myself so before our meeting.]

2. It looks like the requirement to analyze at least three different versions of a proposed new rule (FR, 83.1(1)-(3) and 83.3(a)(3)) is new to the Agency. This seems a reasonable way to ensure that some alternative possible rules are analyzed before the Agency opts for any one rule, but how burdensome would this be, and would it effectively delay the introduction of new rules? [If even one version of a new rule shows very clear net benefits, and if there is a timeliness issue, an argument could be made that the Agency should just introduce that rule without unnecessary delay.]
3. The proposed rule is vague about exactly what would be required in the way of a causal analysis: the only place this is discussed (in the rule itself, not the preamble) is 83.3(a)(7)(i). It seems to me that the agency should at least be encouraged, and perhaps required, to conduct a more formal causal analysis before proceeding with a proposed new rule, though given that causal analysis is still a rapidly developing field, I would not want to be too prescriptive about the form that should take.
4. Part 83.3(a)(9)(iii)(B) states “The pollutant analyzed in the study matches the pollutant of interest in the regulation.” This appears to me to be an attempt to rule out of bounds any discussion based on “co-pollutants”, a question that arose recently in connection with EPA’s mercury rule, where it was claimed there was a substantial “co-pollutant” benefit of reduced PM_{2.5}. I am aware that this is a controversial issue and one that may yet be decided in federal court, but I think SAB should at least discuss its implications.
5. Part 83.3(a)(9)(iii)(D) states “the study location must be appropriately matched to the analysis” and “the study population characteristics must be sufficiently similar to those of the analysis.” As with several other of these points I’m raising, those are not inherently unreasonable objectives, but what do they mean? Could it mean, for example, that a study conducted primarily in Canada would be ruled out of order for a rule intended for the USA? This is one of numerous places where I question whether a statement like this needs to be written into an EPA rulemaking rather than left to the judgment of the scientists making the assessment.
6. Part 83.3(a)(9)(vii)(A) through (G): I’d like us to discuss each of these seven provisions to make sure we are all on the same page here. On the face of it, all of these are reasonable steps that one would expect the Agency to cover, but I raise the same questions again about why they are being written into an Agency rulemaking and whether they impose an undue burden on Agency scientists.
7. A more specific query about 83.3(a)(9)(vii)(G): What does the phrase “age of the air quality data” mean? Could it be interpreted to mean that a study started in the 1980s would not qualify?
8. Part 83.3(a)(12): this section seems to overlap the earlier “transparency rule” but it would be helpful to clarify where the two rules are the same and where they are different. I have a specific question whether they would exclude the Agency using the Harvard Six Cities and American Cancer Society datasets, since the owners of both datasets have repeatedly refused to make them public but, as far as I am aware, are not prohibited by law from doing so.

9. The “Retrospective Analysis” section on FR, page 35624, says “EPA requests comment on whether EPA should include a requirement for conducting retrospective analysis of significant CAA rulemaking”. I find the wording of this rather sinister. There may be individual cases where a CAA rulemaking introduced many years ago seems out of date, where there is reason to think that changes in technology (that could affect costs), or significant new health analyses (affecting benefits), render the original BCA obsolete: in such circumstances, it is reasonable that EPA should repeat the BCA to determine whether the rule is still appropriate. But to make this a “requirement” that would apply to all rulemakings judged “significant” seems excessively burdensome to me, and to raise all sorts of issues about unintended consequences. It seems to me we should look at this issue carefully.

Finally, I should comment that the initial workgroup review also asked us to identify any parts of the proposed rule that do not require SAB review. It seems to me (concurring with other members of the workgroup) that section 83.4, that focuses largely on presentational issues, is largely uncontroversial and does not require further review.

Message

From: Brennan, Thomas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=78CAA4C8D91743C887C1BB5DC8CDB369-THOMAS BRENNAN]
Sent: 11/23/2020 3:20:08 PM
To: Barbara D. Beck [BBECK@gradientcorp.com]; Graham, John D. [grahamjd@indiana.edu]
CC: Johnston, Khanna [Johnston.Khanna@epa.gov]; Armitage, Thomas [Armitage.Thomas@epa.gov]
Subject: RE: Question on revised cross state rule

After I speak with OAR today, I will let you know what I find out.

From: Barbara D. Beck <BBECK@gradientcorp.com>
Sent: Monday, November 23, 2020 10:04 AM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>; Graham, John D. <grahamjd@indiana.edu>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>; Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: Re: Question on revised cross state rule

Thanks Tom,

I think it would still be worth getting more information before deciding. It is not clear to me that the "new rules" focus involved an intent to necessarily include "old rules".

I would like to better understand what the basis of the court ordered revision is.

John may have some additional comments.

Thanks

Barbara

Barbara D. Beck, Ph.D., DABT, ATS
Principal
617-395-5518
bbeck@gradientcorp.com

Gradient's Cambridge office has relocated to Boston!

Gradient | One Beacon Street, 17th Floor | Boston, MA 02108 | 617-395-5000 | www.gradientcorp.com

This message contains information that may be confidential or privileged. Unless you are the addressee (or authorized to receive for the addressee), you may not use, copy, or disclose to anyone this message or any information contained in the message. If you have received this message in error, please advise the sender by reply e-mail, and delete all copies of this message and its attachment(s).

From: Tom Brennan <Brennan.Thomas@epa.gov>
Date: Monday, November 23, 2020 at 9:39 AM
To: John Graham <grahamjd@indiana.edu>, Barbara Beck <BBECK@gradientcorp.com>
Cc: "Johnston, Khanna" <Johnston.Khanna@epa.gov>, Thomas Armitage <Armitage.Thomas@epa.gov>
Subject: RE: Question on revised cross state rule

Wondering since this is a court ordered revision, if it is not in our scope? Historically SAB has only engaged EPA on newly proposed rules. Both our old process and the newly revised regulatory review process seem to have "new rules" as their purpose/focus. This is clearly a revision of a rule. Any thoughts on this before I have my meeting this afternoon?

From: Brennan, Thomas
Sent: Monday, November 23, 2020 9:30 AM
To: Graham, John D. <grahamjd@indiana.edu>; Barbara D. Beck <BBECK@gradientcorp.com>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>; Armitage, Thomas <Armitage.Thomas@epa.gov>
Subject: FW: Question on revised cross state rule

Some more info. I have a fact finding call with Leif today at 4.

From: Hockstad, Leif <Hockstad.Leif@epa.gov>
Sent: Monday, November 23, 2020 9:28 AM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>
Subject: RE: Question on revised cross state rule

Tom – Yes, the CSAPR rule is a separate rulemaking from the O3 NAAQS rulemaking. This current action is a court-ordered revision of the CSAPR rule and not a new rulemaking action per se. In fact the CSAPR rule has been undergoing court-ordered revisions for many years. I do not remember for sure, but the original rulemaking (maybe 10 years ago?) may have been presented to the SAB when it was originally proposed.

Thanks,
Leif

From: Brennan, Thomas <Brennan.Thomas@epa.gov>
Sent: Monday, November 23, 2020 8:34 AM
To: Shoaff, John <Shoaff.John@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>
Cc: Johnston, Khanna <Johnston.Khanna@epa.gov>
Subject: Question on revised cross state rule

[https://www.epa.gov/csapr/revised-cross-state-air-pollution-rule-update#:~:text=On%20October%2015%2C%202020%2C%20EPA,Air%20Quality%20Standards%20\(NAAQS\).&text=EPA%20held%20a%20public%20hearing%20on%20November%2012%2C%202020.](https://www.epa.gov/csapr/revised-cross-state-air-pollution-rule-update#:~:text=On%20October%2015%2C%202020%2C%20EPA,Air%20Quality%20Standards%20(NAAQS).&text=EPA%20held%20a%20public%20hearing%20on%20November%2012%2C%202020.)

Hi John and Leif,

This rule is different from the O3 NAAQS standards correct? Wondering if this should be run by SAB? Thoughts?

Thanks,

Tom Brennan
Director, Science Advisory Board Staff Office
US Environmental Protection Agency

Desk # 202 564 6953
Mobile # 703 581 9300

Appointment

From: Brennan, Thomas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=78CAA4C8D91743C887C1BB5DC8CDB369-THOMAS BRENNAN]
Sent: 3/31/2020 7:31:31 PM
To: Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]; Armitage, Thomas [Armitage.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]
CC: DeBell, Kevin [debell.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]
Subject: Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference
Location: RRB 3rd floor SABSO office conf room -- 31169
Start: 4/1/2020 6:00:00 PM
End: 4/1/2020 7:00:00 PM
Show Time As: Free
Importance: High
Recurrence: Monthly
the first Wednesday of every 1 month(s) from 2:00 PM to 3:00 PM
Required Attendees: Michael Honeycutt; Armitage, Thomas; Johnston, Khanna; Wooden-Aguilar, Helena; Kloster, Andrew
Optional Attendees: DeBell, Kevin; Carpenter, Wesley

On the first Wednesday of each month the SABSO will hold this time for a subset of SAB members to receive briefings from the EPA on newly proposed tier 1 and tier 2 rules. The purpose of the briefings will be to determine if the SAB will conduct a review of the proposed rules. The meetings will be held in the conference room of the SAB Staff Office in the Ronald Reagan Building (room 31169). Based on the topics of the month, technical and management leads from the Offices proposing the rules will be invited.

Message

From: Brennan, Thomas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=78CAA4C8D91743C887C1BB5DC8CDB369-THOMAS BRENNAN]
Sent: 9/23/2020 2:29:00 PM
To: Graham, John D. [grahamjd@indiana.edu]
CC: Barbara D. Beck [BBECK@gradientcorp.com]
Subject: Re: Follow up on the proposed Aircraft GHG ruled

I agree with your decision and will let OAR know.

Best,

Tom

Sent from my iPhone

On Sep 23, 2020, at 10:27 AM, Graham, John D. <grahamjd@indiana.edu> wrote:

e-mail confirmation fine here.

John D. Graham, Ph.D. | Professor
Indiana University
Paul H. O'Neill School of Public and Environmental Affairs
1315 E 10th St, Suite 415, Bloomington, IN 47405
812.855.3933 Phone | 812.855.7802
grahamjd@indiana.edu

<image001.gif>

<image002.png>

From: Barbara D. Beck <BBECK@gradientcorp.com>
Sent: Wednesday, September 23, 2020 10:07 AM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>; Graham, John D. <grahamjd@indiana.edu>
Subject: [External] Re: Follow up on the proposed Aircraft GHG ruled

This message was sent from a non-IU address. Please exercise caution when clicking links or opening attachments from external sources.

Thank you Tom

I believe that this proposed rule does not require SAB analysis.

Should John and I confirm this on our next call or is an email confirmation of the decision OK?

Best

Barbara

Barbara D. Beck, Ph.D., DABT, ATS
Principal
617-395-5518
bbeck@gradientcorp.com

Gradient's Cambridge office has relocated to Boston!

Gradient | One Beacon Street, 17th Floor | Boston, MA 02108 | 617-395-5000 | www.gradientcorp.com

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From: "Brennan, Thomas" <Brennan.Thomas@epa.gov>
Date: Wednesday, September 23, 2020 at 7:04 AM
To: Barbara Beck <BBECK@gradientcorp.com>, John Graham <grahamjd@indiana.edu>
Subject: RE: Follow up on the proposed Aircraft GHG ruled

Hi Barbara,

I am not sure who the peer reviewers were for the letter review, but it was not part of any official SAB business. Since the SAB is a Federal Advisory Committee, it is required by the Act to conduct peer reviews will a full public process. SO the SAB does not do this style of letter review.

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Tom

From: Barbara D. Beck <BBECK@gradientcorp.com>
Sent: Tuesday, September 22, 2020 4:49 PM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>; John Graham (<grahamjd@indiana.edu>
<grahamjd@indiana.edu>
Subject: Re: Follow up on the proposed Aircraft GHG ruled

Thank you Tom,

This is helpful. Since there have been two letter reviews, I do not think further review is necessary. Although, can you tell me if the two letter reviews were performed by an SAB member?

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Thanks

Barbara

Barbara D. Beck, Ph.D., DABT, ATS
Principal
617-395-5518
bbeck@gradientcorp.com

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From: "Brennan, Thomas" <Brennan.Thomas@epa.gov>
Date: Tuesday, September 22, 2020 at 2:43 PM
To: John Graham <grahamjd@indiana.edu>, Barbara Beck <BBECK@gradientcorp.com>
Subject: Follow up on the proposed Aircraft GHG ruled

Hi John and Barbara,

I forwarded your questions to the Office of Air and Radiation and this is what they sent back. Most interesting to me is that in previously, under the old SAB regulatory review process, the SAB did give OAR some feedback on this rule. Here is a link to the letter:
[https://yosemite.epa.gov/sab/sabproduct.nsf/8DA59AB1BE0EA14B85257E660071F2EF/\\$File/EPA-SAB-15-009+unsigned.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/8DA59AB1BE0EA14B85257E660071F2EF/$File/EPA-SAB-15-009+unsigned.pdf)

Although they did not bring it back to SAB, they did take the SAB advice to get elements peer reviewed, hence the two letter reviews reference in the proposed rule.

Here are other responses from OAR:

1. Did the NPRM monetize benefits?

The EPA proposed rulemaking for airplane GHG standards was published on August 20, 2020 (85 FR 51556), and the EPA proposed to adopt standards for GHG emissions from certain classes of engines used on airplanes that match the scope, stringency, and timing of the CO2 standards adopted by the International Civil Aviation Organization (ICAO) in 2017. For the proposed level of stringency (the standards adopted by ICAO), EPA projects there are no GHG emission reductions associated with the proposed standards, and thus there are no monetized benefits projected in the proposal. EPA also analyzed the impacts of two more stringent alternatives. Our analyses show that the proposed standards and one alternative would result in limited additional reporting costs, but no GHG emission reductions. For the second alternative EPA analyzed, we projected that alternative would result in GHG emission reductions and therefore was projected to have further limited additional costs. The GHG emissions benefits (or reductions) for this alternative were monetized.

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Yes, the EPA discussed technologies that would reduce airplane GHG emissions. This work was supported by two peer-reviewed technical reports, one on aircraft technology and one on aircraft emissions inventories.

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Tom Brennan
Director, Science Advisory Board Staff Office
US Environmental Protection Agency

Desk # 202 564 6953
Mobile # 703 581 9300

Appointment

From: Michael Honeycutt [Michael.Honeycutt@tceq.texas.gov]
Sent: 3/31/2020 6:51:00 PM
To: Brennan, Thomas [Brennan.Thomas@epa.gov]

Subject: Declined: SAB Monthly Regulatory Review Process Meeting - teleconference
Location: RRB 3rd floor SABSO office conf room -- 31169

Start: 4/1/2020 6:00:00 PM
End: 4/1/2020 7:00:00 PM
Show Time As: Busy

Recurrence: (none)

Message

From: Michael Honeycutt [Michael.Honeycutt@tceq.texas.gov]
Sent: 3/26/2020 7:37:00 PM
To: Brennan, Thomas [Brennan.Thomas@epa.gov]
Subject: Re: Expect to have the OP report on reg review around mid day tomorrow

Ok I'm open.

> On Mar 26, 2020, at 2:36 PM, Brennan, Thomas <Brennan.Thomas@epa.gov> wrote:
>
> Lets have a quick call if I get it in.
>
> Sent from my iPhone

Message (Digitally Signed)

From: Graham, John D. [grahamjd@indiana.edu]
Sent: 9/23/2020 2:26:35 PM
To: 'Barbara D. Beck' [BBECK@gradientcorp.com]; Brennan, Thomas [Brennan.Thomas@epa.gov]
Subject: RE: Follow up on the proposed Aircraft GHG ruled
Attachments: smime.p7s

e-mail confirmation fine here.

John D. Graham, Ph.D. | Professor
Indiana University
Paul H. O'Neill School of Public and Environmental Affairs
1315 E 10th St, Suite 415, Bloomington, IN 47405
812.855.3933 Phone | 812.855.7802
grahamjd@indiana.edu



From: Barbara D. Beck <BBECK@gradientcorp.com>
Sent: Wednesday, September 23, 2020 10:07 AM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>; Graham, John D. <grahamjd@indiana.edu>
Subject: [External] Re: Follow up on the proposed Aircraft GHG ruled

This message was sent from a non-IU address. Please exercise caution when clicking links or opening attachments from external sources.

Thank you Tom

I believe that this proposed rule does not require SAB analysis.

Should John and I confirm this on our next call or is an email confirmation of the decision OK?

Best

Barbara

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ED_005644A_00000729-00001

From: "Brennan, Thomas" <Brennan.Thomas@epa.gov>
Date: Wednesday, September 23, 2020 at 7:04 AM
To: Barbara Beck <BBECK@gradientcorp.com>, John Graham <grahamjd@indiana.edu>
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From: "Brennan, Thomas" <Brennan.Thomas@epa.gov>
Date: Tuesday, September 22, 2020 at 2:43 PM
To: John Graham <grahamjd@indiana.edu>, Barbara Beck <BBECK@gradientcorp.com>
Subject: Follow up on the proposed Aircraft GHG ruled

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Tom Brennan
Director, Science Advisory Board Staff Office
US Environmental Protection Agency

Desk # 202 564 6953
Mobile # 703 581 9300

Message

From: Barbara D. Beck [BBECK@gradientcorp.com]
Sent: 9/23/2020 2:06:37 PM
To: Brennan, Thomas [Brennan.Thomas@epa.gov]; John Graham (grahamjd@indiana.edu) [grahamjd@indiana.edu]
Subject: Re: Follow up on the proposed Aircraft GHG ruled

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Should John and I confirm this on our next call or is an email confirmation of the decision OK?

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US Environmental Protection Agency

Desk # 202 564 6953
Mobile # 703 581 9300

Appointment

To: Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Brennan, Thomas [Brennan.Thomas@epa.gov]; Armitage, Thomas [Armitage.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: Carpenter, Wesley [Carpenter.Wesley@epa.gov]; DeBell, Kevin [debell.kevin@epa.gov]; DeBell, Kevin [debell.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]

Subject: Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference

Start: 5/6/2020 6:00:00 PM

End: 5/6/2020 7:00:00 PM

Show Time As: Free

Importance: High

Recurrence: (none)

Required Attendees: Armitage, Thomas; Johnston, Khanna; Wooden-Aguilar, Helena; Kloster, Andrew; Michael Honeycutt

On the first Wednesday of each month the SABSO will hold this time for a subset of SAB members to receive briefings from the EPA on newly proposed tier 1 and tier 2 rules. The purpose of the briefings will be to determine if the SAB will conduct a review of the proposed rules. The meetings will be held in the conference room of the SAB Staff Office in the Ronald Reagan Building (room 31169). Based on the topics of the month, technical and management leads from the Offices proposing the rules will be invited.

Appointment

To: Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Brennan, Thomas [Brennan.Thomas@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Armitage, Thomas [Armitage.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: Carpenter, Wesley [Carpenter.Wesley@epa.gov]; DeBell, Kevin [debell.kevin@epa.gov]; DeBell, Kevin [debell.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]

Subject: Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference

Start: 8/5/2020 6:00:00 PM

End: 8/5/2020 7:00:00 PM

Show Time As: Free

Importance: High

Recurrence: (none)

Required Attendees: Wooden-Aguilar, Helena; Armitage, Thomas; Johnston, Khanna; Kloster, Andrew; Michael Honeycutt

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Appointment

To: Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]; Brennan, Thomas [Brennan.Thomas@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Armitage, Thomas [Armitage.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: DeBell, Kevin [deb主.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]; DeBell, Kevin [deb主.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]

Subject: Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference

Start: 9/2/2020 6:00:00 PM

End: 9/2/2020 7:00:00 PM

Show Time As: Free

Importance: High

Recurrence: (none)

Required Attendees: Wooden-Aguilar, Helena; Armitage, Thomas; Johnston, Khanna; Kloster, Andrew; Michael Honeycutt

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Subject: SAB Monthly Regulatory Review Process Meeting - teleconference
Attachments: Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference; Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference; Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference; Canceled: SAB Monthly Regulatory Review Process Meeting - teleconference; Untitled Attachment
Location: RRB 3rd floor SABSO office conf room -- 31169
Start: 4/1/2020 6:00:00 PM
End: 4/1/2020 7:00:00 PM
Show Time As: Tentative

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Appointment

From: Brennan, Thomas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=78CAA4C8D91743C887C1BB5DC8CDB369-THOMAS BRENNAN]
Sent: 2/27/2020 4:53:17 PM
To: Brennan, Thomas [Brennan.Thomas@epa.gov]; Armitage, Thomas [Armitage.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Kloster, Andrew [Kloster.Andrew@epa.gov]; Michael Honeycutt [Michael.honeycutt@tceq.texas.gov]
CC: DeBell, Kevin [debell.kevin@epa.gov]; Carpenter, Wesley [Carpenter.Wesley@epa.gov]
Subject: SAB Monthly Regulatory Review Process Meeting - teleconference
Attachments: Untitled Attachment
Location: RRB 3rd floor SABSO office conf room -- 31169
Start: 4/1/2020 6:00:00 PM
End: 4/1/2020 7:00:00 PM
Show Time As: Busy

Recurrence: Monthly
the first Wednesday of every 1 month(s) from 2:00 PM to 3:00 PM
Required Attendees: Brennan, Thomas; Armitage, Thomas; Johnston, Khanna; Wooden-Aguilar, Helena; Kloster, Andrew; Michael Honeycutt
Optional Attendees: DeBell, Kevin; Carpenter, Wesley

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Appointment

From: Michael Honeycutt [Michael.Honeycutt@tceq.texas.gov]
Sent: 2/27/2020 5:21:16 PM
To: Brennan, Thomas [Brennan.Thomas@epa.gov]

Subject: Accepted: SAB Monthly Regulatory Review Process Meeting - teleconference
Location: RRB 3rd floor SABSO office conf room -- 31169

Start: 4/1/2020 6:00:00 PM
End: 4/1/2020 7:00:00 PM
Show Time As: Busy

Recurrence: (none)